A Clinical Lecture

ON

THE OPERATIVE TREATMENT OF CLEFT PALATE.

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GENTLEMEN,—As you have lately seen me operate upon several patients with cleft palate I have thought it well to take this opportunity of making some practical observations upon the subject of cleft-palate operations in general and upon certain of these cases in particular.

Anatomy.—In early fœtal life the mouth and the nasal fossæ constitute one continuous cavity and somewhere about the eighth week a maxillary process grows horizontally inwards from each lateral wall of the oro-nasal cavity with the view of forming a separation between the two parts. If these lateral processes growing inwards through the whole width of the future nasal floor and, growing equally, failed to meet, the cleft in the palate would extend fore and aft through the exact median line. But as a matter of fact the very front of the hard palate is not developed from the inward-growing maxillary processes but from a column of mesoblastic tissue which descends from the frontal region in conjunction with the anterior part of the nasal septum and with the median part of the upper lip. Sometimes this descending process loses its way and forms an illicit connexion with the tip of the nose, where, with the prolabium and that part of the alveolar process which contains the germs of the central incisor teeth, it constitutes a hideous projection. In such a case there is a complete median cleft of the soft and hard palate and a double hare-lip. If, however, the piece of the alveolar process with the two central incisors could be thrust backwards into its proper position the wide, front part of the palatine cleft thus greatly narrowed would be found to bifurcate, each branch of it running forwards and outwards between the central and lateral incisors of its own side somewhat after the form of the capital letter Y. A more common variety of cleft of the hard palate is that in which the median fissure runs outwards and forwards on one side only—that is, like a letter Y with one arm broken off. This defect is commonly but not always associated with a single hare-lip.

Effects of cleft palate.—Obviously an infant with a cleft palate cannot draw nourishment from the mother's breast. And it not infrequently happens that the fact of the mother noticing the eager and futile endeavours of her child to feed himself has so depressing an influence upon her that her milk dries up and she is unable to supply any even by a breast pump. In these circumstances there is nothing for it but to attempt to rear the child upon artificial human milk. I say "attempt" because a large proportion of such children sink from imperfect nutrition.

"Little and often" is a good way of artificially feeding infants with cleft palate, and during the feeding it is well to have the infant sitting straight up so that the milk may pass easily towards the stomach and have no inclination to escape by the nasal fossæ and nostrils. The milk may be conveniently given by an old-fashioned slipper-bottle with a giant teat which has a hole on the under surface. Thus as the infant sucks the teat fills the palatine cleft and as he compresses the teat in sucking the milk is directed downwards. Or, if the large teat does not work well the milk may be given by a spoon passed well back over the tongue, the child, of course, being kept upright. But in the most favourable circumstance the cleft-palate infant does not flourish, for the child is under the double disadvantage of being brought up by hand and of not being able to take his artificial food conveniently. Unfortunately, however, because the infant does not flourish he is too apt to be "tried" with one patent food after another, each mess proving more unsatisfactory than that by which it was preceded, until in a condition of dietetic bewilderment and gastro-intestinal irritability he well-nigh or actually falls a victim to inanition.

Diagnosis.—It is scarcely necessary to discuss the question of diagnosis of cleft palate. But when the defect is confined to the soft palate it not infrequently escapes detection. The mother brings the infant saying that he does not thrive and that some of the milk escapes by the nostrils. If the practitioner gives a mere casual look at the mouth he will probably fail to discover that the velum is fissured. He should in all such cases depress the tongue by a spoon or spatula and make a thorough inspection. I have met with several cases in which this cause of an infant's want of nutrition had not been recognised or suspected.

When to operate.—If the cleft be confined to the soft palate and the infant is in a satisfactory state of health the operation may be done within a few months of birth. But if the hard palate be also implicated I am at present content to wait at least another year lest the infant should receive a fatal shock from the necessarily severe operation. I am not sure that it is necessary thus to wait before attempting to close the entire cleft, but I am at present inclined to think the delay expedient and if the cleft is a wide one I am convinced that it is discreet. The tissues at this early date are little more than protoplasmic and the infant's power to resist shock must be extremely feeble. I am not satisfied that the risks of the operation in these circumstances are outweighed by the gain of the early closure.

However wide a cleft of the hard and soft palate may be I prefer to operate upon the entire cleft at once rather than divide the operation into two parts, one for the hard palate and one for the soft. Indeed, it is necessary freely to detach the muco-periosteum of the back of the hard palate before one is able to bring the edges of the adjoining part of the soft palate into apposition, and similarly the hinder part of the cleft in the hard palate cannot be closed without loosening the anterior part of the soft palate. Thus in either instance going a step further and dealing with the remaining part of the cleft adds so little to the time expended over the operation and to the shock inflicted upon the patient that in every case it is worth trying for. Nothing succeeds like success and in a large proportion of cases both parts of the cleft when thus dealt with are entirely and permanently closed at the one operation.

Preparations.—To operate on a case of cleft palate when the child is obviously out of condition is to court failure. As a rule the subjects of the defect are thin and miserable-looking and therefore unsuited to bear the loss of blood and the shock which are inseparable from the operation. The first thing to be done is to inquire as to the food and feeding. It too often happens that the children are being brought up on unwholesome patent foods, condensed milk, or such like messes. For this fresh cow's milk and water must be substituted, the milk being treated after the manner which renders it as close an imitation of human milk as possible. Above all people, children require "fresh" food—living food, as it were—not stuff which is shipped in tins or kept in boxes or bottles in a druggist's or a grocer's store.

If a child is in poor condition I advise his being rubbed over with olive oil—regularly massaged in front of the fire—after his warm bath before being put to bed. He should, moreover, sleep in a long flannel nightdress or in pyjamas. I confess that I am a great believer in cod-liver oil for ill-nourished children and I am disappointed when I am told that a weedy, cleft-palate child cannot take it—that it "always disagrees with him." It is a peculiar fact, however, that it agrees perfectly well with many a child who "cannot take it" provided that he does not know that it is being given to him. Most children like sardines—which, by-the-by, is about the only tinned food which is good for them. And when I want to give a child cod-liver oil without his knowing it I advise that as soon as a sardine-box is opened the cotton-seed oil in which the dainty fish are packed be emptied out and that the box be filled up with fresh cod-liver oil. Put on the plate with sardines children take the oil splendidly. From time to time fresh cod-liver oil may be added to the sardines and duly dispensed upon the breakfast plate.

The next thing to be done is to see that there are no carious teeth, enlarged tonsils, or adenoids. Carious teeth should be extracted or cleaned and filled. Enlarged tonsils should be amputated and adenoids cleared away. Some time ago I saw it recommended that enlarged tonsils and adenoids should be dealt with *after* the palatine cleft has

been operated on. Such practice appears to me to be injudicious, especially when one sees how greatly in the ordinary way children improve in health, strength, and appearance when the clearance has been effected. Moreover, the crypts and crevices of enlarged tonsils and post-nasal growths are likely to be haunted by curds of milk or shreds of food which, decomposing, may set up harmful irritation. It should be a rule never to operate on a cleft palate until the mouth and teeth, fauces and pharynx are brought to as wholesome and healthy condition as possible.

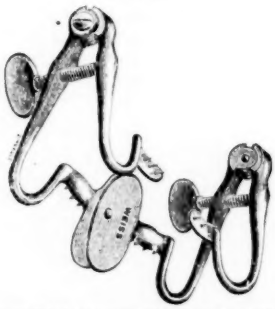
I think, too, that if the surgeon can have the choice he should undertake the operation in fine, warm weather so that the child can the sooner be taken out of doors. Nevertheless, a cleft may be successfully closed in bad, wintry weather with a low barometer. But even in these circumstances the less the child is kept in bed or confined to his bedroom the better. Change of room and fresh air are very necessary. A tented cot and a hot, stuffy bedroom or ward are to be avoided.

Position.—The best position for the child during the operation is upon his back with the head hanging over the end of the table, so that the blood, instead of finding its way into the larynx or stomach, may sink into the naso-pharyngeal dome and, welling up by the mouth or nostrils, may find harmless escape. This position, however, is not without its disadvantages as it sometimes causes embarrassment to the respiration. You will remember the case of that young woman on whom you saw the operation for a cleft a few weeks ago. She had a short thick neck and a rather large thyroid body. I mentioned before the operation began (as you remember) that I did not envy Mr. Henry Davis his post of anæsthetist in that case, and, sure enough, when I was half through the operation the breathing (which had throughout been unsatisfactory) silently ceased. Having brought her head up, however, hooked forward the tongue by the finger in the pharynx, and started artificial respiration she recovered, and I was enabled to finish the operation, which in due course proved perfectly satisfactory. For a fat-necked patient the over-extended position of the head is not usually convenient; still, it should be tried in every case. But it must not be assumed that this inverted position precludes the possibility of blood entering the stomach or larynx; if the child bleeds freely the flow cannot be completely controlled even by position and persistent sponging. A few months ago I was thus operating on a delicate, bleeding child with Mr. Manser at Tunbridge Wells and after the child was put to bed a large quantity of blood was vomited. And you will remember that little boy on whom I was operating in this theatre three weeks ago, how freely he bled and how anxious he made us because some blood had welled up and found its way into his larynx and windpipe. Indeed, that boy was so bad that I called for the tracheotomy instruments with the intention of letting air into the windpipe and of endeavouring to fish out a clot. Just at that moment, however, he took a gasp, expelled a good deal of congealed blood from the larynx and so far recovered that we were enabled to finish the operation. Though I have on other occasions seen children in an equally critical condition when being operated on for cleft palate I have, I am thankful to say, never seen the crisis end fatally. But I would like to enforce these points—first, that when the patient is in the head-downward position there may be serious trouble with respiration and that if hæmorrhage is free danger of blood going the wrong way is not entirely got rid of. Still, this risk is far less than it would be if the child were lying flat on his back. It not infrequently happens that when the surgeon thinks and says that the case with which he is about to deal will be a simple and short affair contingencies arise during the operation which show him that he was greatly mistaken, whilst, on the other hand, if he has had a prolonged and anxious operation which he has finished with difficulty and left with gloomy forebodings the result turns out most happily. It is wise not to prophesy. The operator can never know how the gag will work, how the child will take the anæsthetic, how he will breathe, to what extent the operation will be impeded by bleeding, how the stitches will run, and so on.

Anæsthetic.—Chloroform answers well given first on a napkin and then by a Junker's apparatus. When once the operation is started very little of the vapour is wanted; the narcosis should not be deeper than is needed to keep the child quiet. Sometimes when the operation is a long one I ask the anæsthetist to allow the child partly to recover in order that we may be sure that the narcosis is not needlessly deep. In my experience there is no operation in which the need of a skilled anæsthetist is more marked than in that of the closure of a wide cleft palate in a delicate child, especially when the difficulty is increased by profuse bleeding.

The gag.—A perfect gag has yet to be invented. I think that I have tried almost every gag in the market and I find that I get on best with one which is called after its ingenious inventor, "Smith's gag." A disadvantage in connexion with it is that it is sometimes very difficult to keep it in place, the plates slipping forward from their bearings on the teeth and worrying the surgeon in perhaps the most important stage of the operation. In the last case on which you saw me operate I found Smith's gag quite useless, most of the boy's molar teeth having fallen out or having been extracted in preparation for the operation. I had at home, however, a Smith's gag in which the usual plates had been replaced by bars which carried minute spikes which can slip into interdental crevices or into the toothless gums and there take a firm hold (Fig. 1). On the next occasion of my having this

FIG. 1.



Smith's gag modified by the substitution of spiked bars in the place of the dental plates.

boy into the theatre I therefore used this gag and it answered perfectly. Messrs. Weiss makes these modified gags. Before inserting the gag it is well to pass a large looped suture through the tip of the tongue so that it can be pulled out of the mouth and kept under command. Without this tether the tongue is apt to slip back beneath the lingual plate of the gag and bulging up behind it to hinder the operation on the soft palate. When the tongue is pulled out and the gag is securely fixed in its place the child is lifted towards the end of the table and his head allowed to fall gently backwards. As soon as it is seen that he breathes well in this position the thick mucus which has by this time collected about the cleft may be gently sponged away and the operation begun.

The operation.—With a pair of long, mouse-toothed forceps one side of the soft palate is held and steadied and is transfixed with the palate knife. Then by cutting backwards a thin strip is removed through the entire thickness of the soft palate and uvula. This strip being still held by the forceps the knife is made to travel forwards so that a continuation of the strip may be peeled from the side of the cleft at the front of the velum and along the side of the hard palate. If there is not much bleeding the surgeon continues the incision round the front of the cleft and backwards along the other side, removing the strip if possible in one piece. When this strip is afterwards laid out in position it will be seen that the part which came from the soft palate and uvula is much thicker than the paring from the hard palate which is sometimes but a very thin covering from the edge of the bone. Whilst the assistant is pressing a sponge into the cleft to arrest the bleeding it is well for the surgeon just to examine the strip or strips which he has just removed, so that he may assure himself that a serviceable raw edge has been left along both sides of the entire cleft. If by chance he should not have removed the strip entire it is quite possible that there would be some part of the edge not vivified and there it would be impossible to secure union.

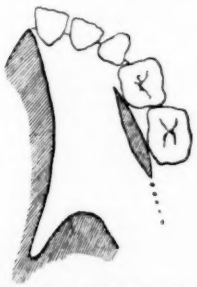
As a rule the palate knives which are supplied by the instrument makers are too thick in the back and clumsy. The best knives for the purpose are old tonsil bistouries which have been often ground; they have a long cutting edge

and a thin back. Tenotomy knives are ill-adapted for the purpose.

The sponges used during the earlier stages of the operation should be of about the size of a pigeon's egg, but they should not be squeezed up into a ball. Being torn off a rather firm, new, honeycomb sponge they should be large enough to swab up the blood from the pharyngeal dome and at the same time to exert pressure against both sides of the cleft at once so as to check the bleeding. The operator must take care that the sponges which he and his assistant are using are safely fixed in the holders or, hitching against the edge of the cleft, they are apt to get adrift. Excellent holders for the purpose are the steel ones with locking jaws designed by Mr. Lund. They may be got at Weiss's.

The next step in the operation is to make a cut about three-quarters of an inch long close to the inner side of the molar teeth of each superior maxilla (Fig. 2). Passing

FIG. 2.



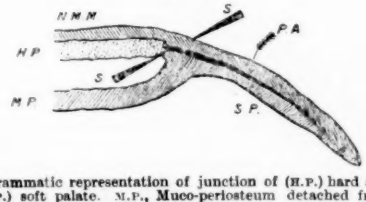
Cleft of hard and soft palate (left side) showing line of incision along alveolar process, with dotted line in which incision may have to be extended.

through to the bone, they divide branches of the descending palatine arteries, so it is well to pause and keep up firm pressure against them with a sponge on either side of the roof of the mouth.

By means of raspatories of various curves introduced through the lateral incisions the muco-periosteum is detached from the hard palate. The higher the pitch of the roof of the mouth the more extensive the area of these flaps and the greater the probability of their median borders being brought together without tension. Indeed, in some cases of high roofs the flaps when brought down and drawn inwards are found to be so slack that not only their bare edges but even a slight portion of their raw upper surface can be brought together for suturing. This, of course, increases the chance of securing prompt union.

The great advantage of detaching the muco-periosteal flap by working inwards with the raspatory through the alveolar incision is that one can dispense with the rectangular knife which used formerly to be employed for starting the separation of the flap from the border of the cleft. And thus the

FIG. 3.



Diagrammatic representation of junction of (H.P.) hard and (S.P.) soft palate. M.P., Muco-periosteum detached from hard palate. N.M.M., Mucous membrane from floor of nares. P.A., Aponeurosis of soft palate. S.S., Blades of curved scissors about to cut through aponeurosis.

surgeon can be certain of making use of the whole thickness of the muco-periosteum near the cleft, of which he could not be when he was working outwards with the knife. Moreover, as the flap is detached by a blunt rather than by a cutting instrument there is less bleeding. But when the muco-periosteum has been thus detached it is generally impossible to induce those parts of the flaps which have been brought down from the horizontal plates of the palate bones to come together in the middle line without tension. This is due to the fact that they are continuous with the velum, which is very firmly connected with the posterior border of the hard palate. In the substances of the velum is a strong fibrous foundation or *aponeurosis* which, attached to the border of the hard palate, receives part of the insertion of the tendon of the tensor palati as well as attachments of the levator palati and palato-pharyngeus (Fig. 3). And in order to get the half of the velum and the hinder part of the muco-periosteal flap to the middle line this aponeurosis must be disconnected from the bony arch. The success of the operation upon the cleft depends very largely upon the thoroughness with which this disconnexion is effected. The best way of doing it is by using a pair of scissors bent upon the flat almost to a right angle. One blade is passed between the detached muco-periosteum and the under surface of the back of the hard palate and the other is passed through the cleft and over the back of the velum where it springs from the posterior border of the hard palate. Thus between the blades are placed the thin layer of mucous membrane which is continued on to the back of the velum from the floor of the nasal fossa and the aponeurosis of the soft palate with that part of the spreading tendon of the tensor palati which is inserted into the under surface of the horizontal process of the palate bone. When this scissor cut has been made the whole sheet of muco-periosteum and velum hangs loose and after a little more sponging the flaps are ready for suturing. Perhaps eight or ten sutures are required for their secure adjustment and it matters little, I think, of what material they are composed. Personally I use nothing but silver wire, which has been so prepared that it is soft, tough, and flexible, and well chosen horsehair, which has been rendered aseptic and has been soaked in hot water to increase its pliability. Some operators prefer silk, others silkworm gut, but I have always found silver wire and horsehair answer every requirement. Silk I should have thought would be likely to soak up discharges and to swell, but, as I say, I have no practical experience of it in these operations.

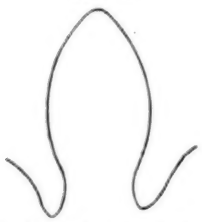
As the sutures are being inserted in the muco-periosteal flaps, beginning near the incisor teeth and working backwards, it will probably be found that as the flaps are drawn together in the neighbourhood of the junction of hard and soft palate there is so much tension that if the silver sutures were twisted up either the wire would break or it would cut its way through the flap. It is necessary, therefore, to prolong the incisions which have already been made through the alveolar muco-periosteum backwards through the halves of the velum, so that the edges of the flaps may be adjusted along the middle line entirely free of tension. The course which this prolongation would take is shown by the dotted line on Fig. 2. The incisions thus freely made cut through the aponeurotic insertion of the tensor palati and the chief part of the insertion of the levator palati as well as of the palato-pharyngeus. Many branches of the descending palatine arteries being thus divided there is some more bleeding, but as a rule it soon stops under pressure. When the flaps are adjusted these lateral cuts sometimes look unpleasantly large, especially if a wide cleft demanded a considerable drawing inwards of the flaps; often the gaps are so wide that they serve for the introduction of small scraps of sponge held in slender forceps for removing the last of the clots or of the fluid blood from the naso-pharynx. Sometimes the incisions have to be made so freely that the flaps look as if they would not improbably slough on account of their lateral blood-supply. As a matter of fact, however, they do not slough unless a septic inflammation attacks the wounded tissues, their vascular supply being exceedingly rich.

With regard to tightening up the silver sutures this is best done by the ordinary torsion forceps, as the operator can thus see exactly what he is doing, which would not be the case if he were making the twist with his fingers. And as in the course of the operation he may be called upon to tighten up this suture or that it is necessary that he should know in which direction he should make the twist. The wire sutures should always be twisted from left to right, as in dealing cards.

But even when septic inflammation and localised sloughing do occur, the operation does not necessarily prove a hopeless failure. Some part of the cleft is generally closed and healthy granulation tissue arises in due course and effaces some portion of the cleft.

As I have shown elsewhere, the cause of the septic inflammation in the case of failure to secure primary union of the flaps is the unwelcome cultivation of staphylococci in the area of operation. Let me here tell you of a case on which I operated last spring which was temporarily wrecked by the incubation of staphylococci. From the notes of this case, which were kindly supplied by Mr. Templeton, F.R.C.S. Eng., I find that the child, a boy, was five years old when I operated on him on May 26th. The cleft involved the soft palate and the back of the hard, being ¾ in. broad and 1¼ in. long (Fig. 4). Within a day or two of my operating on the

FIG. 4.



Actual size of cleft which broke down after first operation but was successfully closed three weeks later. (After a sketch by Mr. Templeton.)

cleft the temperature went up and the boy was covered with a punctiform (septicæmic) rash. The wounds were covered with thick muco-pus and the suturing broke down entirely. A fortnight after the operation the wounds looked clean and the child's general health was good, so I arranged to perform the operation again the following week, hoping that the child had established in himself an immunity against another staphylococcic attack. On June 16th, therefore, with knife, raspatory, and scissors, I brought the freshened edges of the flaps together and adjusted them by wire sutures. The operation turned out a success, the child being sent home three weeks later with the cleft completely closed.

I venture to think that the report of this case will prove interesting to surgeons who are in the habit of operating on cleft palates—that is if, as I suspect is probable, every now and then they suffer the keen disappointment of seeing a carefully executed operation ruined by septic inflammation. Hitherto it had been my custom in such circumstances to send the child away into the country and to operate some months subsequently, but in this instance I was anxious to see if the septic outbreak had not rendered the child temporarily immune against further attack of a like nature. So soon, therefore, as the effects of the local storm had passed away I re-did the operation and I shall certainly adopt this course should circumstances at any future time suggest it. In private as well as in hospital work it will be an advantage to make the second attempt when the child is well broken in and amenable, and in private when the nurses are still in the house and the child has become accustomed to them. I think it not improbable as time goes on that a child on whom a staphylorrhaphy is to be done will have an artificial immunity established in him by the injection of anti-staphylococcus serum. But for my own part I shall be unlikely to have recourse to it. I shall still be content to let the children run the chance of septic inflammation rather than court unknown risks. And, as a matter of fact, now that I am very strict in the carrying out of the simple preliminary methods of asepsis to which I referred at the beginning of this lecture I rarely find the line of suture breaking down or the wounds becoming coated with that foul, stringy muco-pus which used formerly to be a not infrequent herald of a more or less complete failure and disappointment.

WEST CORNWALL INFIRMARY AND DISPENSARY.—The annual meeting of the West Cornwall Infirmary at Penzance was held on Jan 19th under the presidency of Prebendary Hedgeland. The report stated that 145 in-patients had been treated and the institution was practically working at the full available capacity. The accounts showed an expenditure amounting to £842 and receipts amounting to £749; there was an adverse balance of £93. The committee had received £600 from the late Mr. J. C. Wren and £500 from Mr. W. E. T. Bolitho.

IDIOPATHIC DILATATION OF THE COLON,

ILLUSTRATED BY A CASE IN WHICH THE ENTIRE RECTUM, SIGMOID FLEXURE, AND DESCENDING COLON WERE EXCISED.

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OF late years there has crept into medicine the term "idiopathic dilatation of the colon." This term has been applied to certain morbid conditions in which a few common clinical manifestations appear to have given expression to varied and possibly diverse pathological states. Whatever may be the structural changes which give rise to this dilatation of the bowel the clinical phenomena included under the term are more or less definite and unvaried. The main features are these. The colon, and especially the lower part of it, is enormously dilated. It is tympanitic and distended with gas to a degree that in some instances almost surpasses belief. The patient suffers from certain mechanical effects of this distension and notably from shortness of breath, palpitation of the heart, œdema of the legs, and possibly albuminuria. The patient may be unable to move and the difficulty of breathing may be such that the face and extremities become livid. Marked constipation is usually a conspicuous feature, while vomiting and troublesome hiccough are not uncommon. The particular term "idiopathic dilatation" is based upon the assumption that the distension of the bowel is not due to any obstruction in its lumen. It is therefore necessary to exclude from the present category all cases of dilatation of the colon due to volvulus, to the impaction of fæcal masses or foreign bodies, to the lodgment of concretions, and to the existence of stricture of any type. In like manner would be excluded examples in which the colon or rectum has been narrowed or occluded by the pressure of a tumour having its origin without the bowel wall.

In dealing with this present subject it will be well to inquire first of all into the circumstances under which portions of the alimentary canal become dilated in the absence of any obstructive cause, and in the second place to consider what conditions may underlie certain of the reported cases of "idiopathic dilatation of the colon." With regard to the first matter it may be said at once that any part of the alimentary tube may become dilated without there being the least obstruction in its lumen. At one time it was supposed that whenever the stomach was dilated there was some obstruction at the pylorus which prevented the escape of the gastric contents and allowed the organ to be dilated by the gaseous products of decomposition. In like manner in marked tympanites of the bowel it was loosely assumed that the bowel was distended with gas which could not escape owing to some obstruction in the distal part of the canal. These assumptions have long since been shown to be without foundation. Obstruction in the lumen of the intestine is not the most ready means of inducing meteorism. Interference with the innervation and blood-supply of the bowel wall will cause a much more speedy tympanites. In animals the ligaturing of the main mesenteric vein is followed by quite intense meteorism and one of the most extreme examples I have seen of tympanites of the small intestine in the human subject was due to thrombosis of the superior mesenteric veir.

From a clinical point of view it is desirable to recognise most fully that distension of any portion of the alimentary canal may be entirely disassociated from any obstruction in the lumen of the tube. Certain phases of "idiopathic dilatation" immediately suggest themselves. One of the most interesting is provided by the condition known as "ballooning of the rectum." Here on introducing the finger into the anus the rectum is found to be apparently dilated to its utmost. It may be dilated in the same way as one speaks of the iris as dilated, but it is certainly not distended, and the term "ballooning," which suggests extreme inflation with gas, is entirely misleading. The ballooned rectum is not distended with gas, but its condition is due to some phase of paralysis. If two fingers be introduced into such a rectum so to allow gas to escape the ballooning remains the same. It is the muscular wall of the gut which is at fault and not its contents. On the other hand, if the patient be anæsthetised the ballooning vanishes. This ballooning is met with

in many conditions. It is often associated with stricture of the lower colon, with tumours about the pelvic brim, with conditions indeed which may, through pressure, effect the innervation and blood supply of the terminal part of the gut. I have met with a very marked example of "ballooning" in an old man who was suffering from what proved to be a fatal attack of sub-acute perityphlitis. Those who are concerned with the physiology of idiopathic dilatation of the bowel may well commence with the study of ballooning of the rectum.

Idiopathic dilatation of the colon of moderate degree is well seen in what may be termed masked peritonitis. Indeed, a little inflammatory focus within the abdomen (and without the pelvis) is a common cause of persisting dilatation of bowel. As an example of masked peritonitis I may take such a case as the following. An abdominal section—such as the removing of a diseased vermiform appendix—is performed. For a day or two all goes well and then appear the phenomena of masked peritonitis. There is great distension of the epigastric region due apparently to dilatation of the transverse colon. The patient is very frequently sick and can retain little or nothing in the stomach. He has obstinate and often most persistent hiccough. There is no pain or next to none, no tenderness of the abdomen, and no board-like hardness of the abdominal muscles. The abdomen may be perfectly soft in all parts, there is no rise of temperature, the bowels respond to enemata and to such an aperient as calomel, but the dilatation of the colon, the irritability of the stomach and possibly the hiccough persist. After the bowels have acted there is some little diminution in the epigastric distension, but it is only temporary. The symptoms may last for many anxious days and at last end in recovery. It may be mentioned that in this condition no drug answers so well as strychnia administered hypodermically.

As regards the stomach it is needless to say that certain forms of dilatation of that organ are described in which there is no evidence of any obstruction of the pylorus. There is a good deal to suggest that some forms of rapid dilatation of the stomach may depend upon nerve influences which have their starting point in some infective or inflammatory process. In one of the two fatal cases of "acute gastric distension" described by Dr. Fagge a sloughing abscess was discovered behind the duodenum after death. Acute dilatation of the stomach of the ordinary type is said by Dr. Clifford Allbutt to only occur as the sequel of certain acute and debilitating diseases such as acute rheumatism, active forms of pulmonary tuberculosis, malignant endocarditis, and septicæmia. I have seen acute dilatation of the stomach follow upon severe and extensive contusion of the abdomen from which the patient ultimately recovered and in which there was no evidence that there was at any time an obstruction of the pylorus. So far, then, it may be safe to say that in certain portions of the alimentary canal extensive dilatation may occur which is independent of any obstruction in the lumen of the tube. To such forms the somewhat vague term "idiopathic" may, with a scarcely less vague reason, be ascribed.

When we turn to the series of clinical cases which are collected under the title of "idiopathic dilatation of the colon" it is evident that we have to deal with conditions which are much less ephemeral than the casual states of distension to which allusion has just been made. An examination of this collection of cases at once raises the question as to how far they are accurately described by the term "idiopathic." Certain of the reported examples are, as Dr. Hale White[1] has pointed out, apparently instances of extreme fæcal accumulation. In a case under the care of Dr. Bristowe,[2] for example, the patient, a girl aged eight years, had had no action of the bowels for seven weeks before her admission into hospital. She had always been the subject of constipation and at her death the entire colon was found to be enormously distended with fæces to a point within two inches of the anus. In another case[3] selected by Dr. Hale White the patient was a man, aged twenty-eight years, who had been always constipated and who had had several attacks due to fæcal accumulation. The distension of his abdomen was enormous and there was œdema of the legs, pelvis, and scrotum. The colon had a diameter of from 6 in. to 8 in. and contained no less than fifteen quarts of fæcal matter.

[1] Clifford Allbutt's System of Medicine, vol. iii., p. 968.
[2] Brit. Med. Jour., vol. i., 1885, p. 1085.
[3] Dr. Peacock's case—Transactions of the Pathological Society of London, vol. xxxiii.

When the other cases come to be examined it is at once evident that they can be divided into two classes. In one series of cases the patients are adults, are mostly males, and are over fifty years of age. In the other series of cases the patients are children and symptoms of abdominal trouble have been more or less apparent from birth.

I do not propose to discuss in this paper the cases of dilatation of the colon met with in elderly subjects beyond to venture the remark that the idiopathic nature of the dilatation is not by any means made manifest. In certain of the cases the dilated bowel—practically always the sigmoid flexure—was much hypertrophied and it is evident from such hypertrophy that it had been engaged in overcoming some obstruction. The history of these cases suggests that the habitually overloaded sigmoid flexure hanging down in the pelvis had become bent upon itself at its meso-colic extremity so that the distal end of the loop had become occluded by kinking. The account of habitual constipation, of previous attacks attended with absolute obstruction and immense distension, the circumstance that during such attacks enemata are unavailing and the condition of the parts found after death strongly support this suggestion. Indeed, one might go so far as to say that the majority of the examples of so-called "idiopathic dilatation of the colon" occurring in elderly subjects appear to be examples of simple dilatation of the bowel above an imperfect but definite obstruction. With regard to the cases of "idiopathic dilatation of the colon" in children it appears to me that they have even less claim to the title "idiopathic" than have the instances just disposed of.

The evidence obtained from the perusal of these cases very strongly suggests that the great majority of them at least depend upon a congenital narrowing of the lower extremity of the large intestine. At the end of this paper I have given an account of a small child who exhibited in a marked degree the features of "idiopathic dilatation of the colon" as shown by the enormous distention of the abdomen, the obstinate constipation, the hypertrophy of the lower part of the colon and the practical failure of all purgative measures. The case indeed may be taken as a quite typical example of the trouble described under this questionable title. In the present instance the patient was treated by operation and the whole of the bowel below the transverse colon removed together with the anus. The child made an easy recovery. The examination of the bowel, however, made it evident that the distension was not "idiopathic" but was due to a congenital narrowing, regular and uniform in degree, of the lower end of the colon. Indeed, the rectum and sigmoid flexure were found to be defective in length and to be represented by a narrow and contracted tube of uniform calibre.

On turning to the recorded cases one finds that such a condition has been noticed as a congenital defect in other parts of the intestine and the narrowing has been found to involve now and then a considerable extent of bowel.

Dodd,[4] for example, gives an account of a male infant who lived for twelve weeks suffering all that time from much intestinal distress. The necropsy showed that the ascending and transverse parts of the colon were throughout but little larger than an ordinary lead pencil. In another instance Atkin[5] discovered the rectum and colon of a child who lived for two days to be no larger than an ordinary quill.

On reviewing the recorded cases of "idiopathic dilatation of the colon" in children the following particulars call for attention. Osler[6] narrates the histories of three cases occurring in young children. One was a boy, aged ten years, who was thin but who presented an enormous abdomen. He had attacks of abdominal pain with vomiting. Peristaltic movements were visible through the parietes. Frequent washing out of the bowel with a long tube led to some slight relief. Laparotomy had to be performed. There was no stricture; the sigmoid flexure was 18 in. in circumference; the cæcum was half this size and the bowel progressively increased in size from the cæcum to the sigmoid flexure. The distended bowel was folded upon itself, but not so as to cause any obstruction. An artificial anus was established. In another case a boy, aged three years, who had been troubled with constipation from birth, presented after death an enormously dilated colon which held fourteen pints of water. The

[4] THE LANCET, June 11th, 1892, p. 1299.
[5] THE LANCET, Jan. 31st, 1885, p. 203.
[6] Archives of Pediatrics, 1893, p 111.

greatest dilatation was about the sigmoid flexure. Death had been due to acute colitis. The third case was that of an infant, aged seven months, whose abdomen was much distended and whose bowels never acted unless an injection was given. If the injection was not administered daily the swelling of the abdomen increased and the child vomited.

Walker[7] records the case of a child who died from emaciation and exhaustion at the age of eleven years. Since a few weeks after birth enlargement of the abdomen had been noticed and this continued to increase as the child grew up. There was persisting constipation. At the necropsy the transverse and descending colon measured 23 in. in circumference and looked "like a large leg and thigh." The commencement of the cæcum and the distal end of the sigmoid flexure are described as normal. The diaphragm was so pushed upwards that its dome was only two and a half inches from the supra-sternal notch.

Formad[8] gives an account of a man, aged twenty-nine years, whose abdomen was so enormous that he was exhibited under the title of the "balloon man." The condition was congenital and death was due to sudden syncope. The colon was as large as that of an ox. Marked constipation had been the symptom during life.

Rolleston and Haward[9] record the case of a boy, aged twelve years, who had suffered from distension of the abdomen and very troublesome constipation since he was two months old. On one occasion the bowels had not acted for nine weeks. The boy when seen was much emaciated, the abdomen was of enormous size, and through the thinned parietes peristaltic movements could be seen. The abdomen was in all parts tympanitic. He had repeated obstructive attacks and in one of these he died. The colon was found at the necropsy to be of enormous size. The distension mainly concerned the descending colon and sigmoid flexure. The rectum is said to have been of normal size. The colon was much hypertrophied. Rolleston and Haward refer in their paper to certain other cases of "congenital idiopathic dilatation of the colon."

Instances of early death—within eighteen months of birth—in cases associated with extreme dilatation of the colon are given by Hirshsprung[10] and Oestreich.[11]

All these cases have certain very striking features in common. Distension of the colon and obstinate constipation have been noticed practically from birth; the distension has been extreme and has mainly involved the lower sections of the colon; the wall of the dilated bowel has been greatly hypertrophied; movements of the hypertrophied coil have been visible through the parietes; relief of the bowel has been effected almost solely by enemata. Certain secondary conditions, such as catarrh and ulceration of the distended gut, with possible tearing of its walls in extreme cases, have been noted. All the cases, except perhaps one in which an artificial anus was established, appear to have ended fatally. The general circumstances of these cases do not seem to be consistent with the idea of an "idiopathic dilatation of the colon." The very prominent feature in every example of the trouble has been some obstruction in the lower part of the large intestine. The conditions presented are not comparable with those met with in idiopathic dilatation of other parts of the alimentary canal to which attention has been directed. In the case which is here reported there was a distinct, even, and extensive congenital narrowing of the lower extremity of the colon. The symptoms produced were most typical and entirely agreed with those detailed in the reported examples.

I venture to think that there is strong evidence to support the suggestion that all cases of "idiopathic dilatation of the colon" in young children are due to congenital defects in the terminal part of the bowel, that there is in these cases an actual mechanical obstruction and that the dilatation of the bowel is not idiopathic. The marked hypertrophy of the distended gut suggests in the most emphatic way that there is an obstruction to be overcome and such hypertrophy is quite inconsistent with the conception of an "idiopathic" dilatation of the bowel. I am not aware of a previous instance of the treatment of this condition by a radical operation.

An illustrative case.—A little girl, aged five years and nine months, was brought to me on Jan. 5th, 1897. She was the daughter of perfectly healthy parents, was living in a country district under favourable conditions and had been all her life the subject of the most anxious and careful attention. She was suffering from severe constipation which was becoming almost insurmountable and which was attended by frequent attacks of intestinal obstruction. The child was frail and delicate looking, her face was pallid and she was thin almost to emaciation. The abdomen was of enormous size and was distended like a balloon. It was everywhere uniformly tympanitic and exhibited precisely the condition described under the title of idiopathic dilatation of the colon. Through the thinned parietes an enormous coil of intestine, evidently colon, could be seen. It appeared to occupy almost the whole abdominal cavity. It was the seat of certain visible peristaltic movements which, however, were occasional only. The tongue was foul and the breath was offensive. The appetite was excellent. The bowels never acted naturally and a motion was only obtained by passing a rigid tube some ten inches beyond the anus and then administering an enema. There was considerable pain in the abdomen. The anus was very small and a digital examination without an anæsthetic was quite impossible.

The history given was as follows. The child was born in March, 1891. Two days after birth vomiting commenced and continued off and on for several days, the bowels ceased to act and some distension of the abdomen became evident. Aperient medicine had no effect and relief was ultimately obtained by enemata. Like attacks, marked by vomiting, absolute constipation and distension of the abdomen, occurred in July, August, and September of the same year. At the end of 1891 there was a very severe attack, in which the patient's life seems to have been in danger. The distension of the abdomen became excessive and permanent, the bowels only acted after enemata and when enemata failed vomiting and increased distension appeared until relief was obtained. Aperient medicines proved to be valueless and were finally quite abandoned. Massage and other measures were tried but without effect. In August, 1894, relief of the bowel was attempted by means of enemata given through a long rigid tube passed some ten inches into the bowel. This measure was so successful that for ten months the child had only two or three obstructive attacks although the distension of the abdomen persisted and remained very considerable. In July and November, 1895, there were severe and alarming attacks of intestinal obstruction which finally yielded to enemata by means of the long tube. Up to this time there had been comparatively little complaint of abdominal pain. In 1896 the child began to suffer from cramping pains in the abdomen which increased in severity as time went on and which were evidently due to disorderly peristaltic movements in the now much hypertrophied bowel. Gurgling and bubbling sounds could be heard in the abdomen and sounds as of the dropping of water. The attacks of obstruction became more frequent and were of longer duration. The distension of the abdomen became enormous and when the distension was at its maximum the child was unable to move. Enemata, no matter how administered, were now losing their effect, no aperients could be tolerated, and the condition of the child when she came under my notice was certainly very deplorable.

I performed laparotomy on Jan. 13th, 1897, opening the abdomen in the median line below the umbilicus. There immediately presented a gigantic coil of colon which looked and felt like the adult stomach and which appeared to fill up the whole of the abdomen. This coil was at once emptied of its gas through a small incision. The wall of this intestine was smooth and much thickened by hypertrophy and the actual diameter of the collapsed loop was eight inches. It was this coil which had practically alone caused the distension of the abdomen. Further examination showed that the lower part of the bowel corresponding to the rectum and sigmoid flexure was represented by a straight solid-looking tube about the size of an adult's forefinger and some eight or nine inches in length. This tube was without sacculation and its longitudinal muscular coat was very marked. It was of uniform diameter. It was provided throughout with a short meso-colon. There was scarcely a trace of fat within the abdomen and as a result the blood-vessels of the intestine were easily identified. The left colic artery, much increased in size, went to the dilated loop of the colon, while the sigmoid branch of the inferior mesenteric artery ran to the narrowed tube below the dilatation. The junction between the dilated gut and the narrow tube was quite abrupt. I enlarged the little opening I had made into the colon and

[7] Brit. Med. Jour., vol. ii., 1893, p. 230.
[8] Annals of the Universal Medical Sciences, vol. i., 1893.
[9] Transactions of the Clinical Society of London, vol. xxix., p. 201.
[10] Annals of the Universal Medical Sciences, vol. i., 1893.
[11] Berliner Klinische Wochenschrift, 1893, p. 852.

introduced the finger to examine the interior of the great pouch. Its walls were smooth and a flap-like fold of mucous membrane occupied the orifice that led into the narrow tube. This opening readily took the forefinger. The fold of mucous membrane may have contributed to certain of the obstructive attacks and may explain the retention of certain enemata. In examining the parts, however, it appeared more probable that the attacks of obstruction would be due to bending or kinking of the bowel at the point where the tube and the great sac joined. The length of the narrowed part of the bowel corresponded to the length of tube which experience had shown was necessary to produce any emptying of the great pouch. The even contraction of the lower part of the bowel may have been in some degree due to the constant use of this tube. I passed a gum-elastic tube of large calibre through the anus and along the narrowed rectum well into the interior of the dilated bowel. The tube measured twelve inches. I had some hope that if it would be kept in position for some time the distension would be relieved and a more normal action of the bowels would be possible. I closed the opening I had made into the descending colon, but brought the suture line into the centre of the parietal wound so that an artificial anus could be established at any moment. This fixing of the bowel would, I hoped, tend to prevent it from becoming kinked or bent. The wound in the parietes was then closed in all but its central parts.

For some days the abdomen remained free from distension and the child from pain. Some fæcal matter was passed, but in due course the tube became blocked and could not be freed; another tube could not be properly introduced, the child felt the worry of a foreign body in the bowel, and at the end of seven days the use of the tube was abandoned and an artificial anus established in the centre of the median wound. Through this artificial opening all the motions were passed for the next nine months. Practically nothing came by the rectum. The distension was relieved and the child was free from the continued spasmodic pains. There was, however, some difficulty in keeping the artificial anus open, as there always is with such openings when made as the present one was made. This necessitated the introduction for so many hours each day of a bent rubber tube which kept the orifice quite patent but which occasioned the child a good deal of distress. In October, 1897, I resolved to attempt the excision of the colon from the splenic flexure to the anus, as this appeared to afford the only possible prospect of giving complete relief to what was still a distressing condition.

The second operation was performed on Oct. 29th. By means of an elliptical incision in the skin I isolated and removed the artificial anus, entering the abdomen on each side of the opening. The orifice in the colon I closed by a series of substantial sutures. I found that the gut, which had at one time been so enormously distended, was now of more moderate dimensions, and its point of juncture with the narrow tube which represented the lower part of the colon was still abrupt. The narrowed tube had shortened somewhat as the result of removing the distension. The dilatation of the colon extended up to the splenic flexure. Beyond that point the colon was practically normal, although it had evidently been to some degree distended and still showed some hypertrophy of its walls. The colon on the right side was normal and the whole of the greater bowel had a very free meso-colon. Having found that I could bring the left extremity of the transverse colon to the anus I isolated and ligatured the left colic artery and having clamped the bowel divided it at the splenic flexure. I then isolated the sigmoid artery and the superior hæmorrhoidal vessels and ligatured them. The absence of fat in the retro-peritoneal tissue rendered this proceeding very simple. At the same time I ascertained that the distribution of the middle and right colic arteries was normal. I then excised the gut representing the descending colon, the sigmoid flexure, and the upper part of the rectum. I divided the bowel low down in the pelvis below the entrance of the superior hæmorrhoidal artery. A few bleeding points made manifest by the excision required ligatures. The child was now placed in the lithotomy position and having made an elliptical incision around the evidently narrowed anus I proceeded to remove the anus together with the lower and remaining portion of the rectum. The separation of the rectum from the slender vagina was a somewhat tedious matter. The middle hæmorrhoidal vessels were secured and the lower end of the rectum removed without difficulty. I returned to the abdominal cavity and brought the transverse colon down to the anus where I secured it by a series of close sutures. The gut was conducted into position by four pressure forceps which were passed into the abdomen through the hole in the perineum. The operation was concluded by closing the wound in the abdomen without drainage.

The child made a speedy and excellent recovery. No sedative of any kind was needed as little pain was complained of. She was once sick. The only complication was represented by some suppuration between the new rectum and the vagina. This was no doubt due to accidental infection of the tissues while drawing the transverse colon into place. As soon as the child began to run about again this discharge ceased entirely. It is probably safe to conclude that the patient will in due course obtain control over the new anus. Be that as it may it was clear that the condition previous to the second operation was not consistent with other than a very short life.

It is quite clear that in this particular instance the dilatation of the colon was due to a congenital narrowing of the lower extremity of the bowel as represented by the segment supplied by the inferior mesenteric artery. This narrowed part exhibited no structural change. The specimen is in the Museum of the Royal College of Surgeons of England. Little idea of the immense degree of dilatation of the colon can be gathered from the preparation as it now appears. The junction of the narrowed portion with the dilated part is not so abrupt as it appeared to be before the intestine was removed. At this point of junction there is no mechanical obstruction and no disease of either mucous or muscular coats. In mounting the preparation the structures which formed the anus have been removed.

Wimpole-street, W.

A CASE OF COMPLETE REMOVAL OF A MULTILOCULAR CYST OF THE PANCREAS; RECOVERY.[1]

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I WAS asked by Mr. Manley Sims to see the subject of the following notes on Oct. 5th, 1897. The patient, a married woman, forty-five years of age, had first noticed a swelling in the abdomen about seven months earlier, her attention having been drawn to the part by a slight tenderness. She stated that the swelling had grown very rapidly. By palpation with one hand behind and the other over the front of the abdomen the growth was easily felt in the left loin. It appeared to be from five to six inches in diameter and of a more or less uniformly rounded shape. Its greatest bulk was below the costal margin, but it was freely moveable and could be pushed with particular ease upwards and backwards until about three-fourths of it were overlapped by the ribs. The percussion note over the upper part of the anterior and outer aspects of the growth was dull, over the lower and inner parts the note was resonant. The percussion note was slightly duller over the ordinary position of the spleen than over the neighbouring lung tissues, this impaired resonance being quite separate from the abnormal dulness over the tumour in the abdomen. The right kidney was palpable and appeared to be of normal size and somewhat moveable. The tumour had no connexion with the pelvis. Mr. Sims had repeatedly examined the urine and had invariably found it free from albumin and sugar. In all other respects the patient was perfectly healthy and there was no history of any injury. During her first pregnancy she suffered from severe eclampsia. The child lived, and two other children were born without trouble of any kind. The patient had lost flesh to some extent but she was very well nourished and had been doing her best to reduce her weight. The family history threw no light on the nature of the tumour.

I believed the growth to be renal. I thought it was solid, and I inclined to the opinion that it was a sarcoma. It was arranged that another consultation should take place a month or six weeks later, and that in the meantime the patient would not take violent exercise or expose herself to any

[1] A paper read before the Medical Society of London on Dec. 13th, 1897.

avoidable risk of injury. The patient was also seen by Dr. Champneys and Mr. Frederick Treves with Mr. Sims, and early in November we all met in consultation. The tumour was not larger then; if anything, I thought it smaller and more mobile than before. It was much softer and there was little doubt that it contained fluid. The patient had increased in weight by four pounds. I at once gave up the diagnosis of sarcoma, and we all agreed that the growth was most probably a hydronephrosis, although it was remarked that the diagnosis was not absolutely certain and that the possibility of the tumour being a neoplasm was an additional reason for recommending operative treatment. I have to thank my fellow consultants for allowing me to mention their names in connexion with this case; that we should all four have been at fault is sufficient evidence of the difficulty of making a correct diagnosis. On the assumption, then, that we had to deal with a hydronephrosis the risks of removal of the kidney and the risks of leaving it alone were placed before the patient and her friends, and it was decided that it should be removed.

On Nov. 9th, in the presence of Mr. Manley Sims, I opened the abdomen by a vertical incision about two inches to the left of the middle line and ascertained that the right kidney was of normal shape, size, and consistence, quite smooth on its surface, and slightly more mobile than usual. The tumour was larger than I had supposed and more irregular in outline. The transverse colon lay in front of it. Above the colon the tumour was covered by peritoneum and connective tissue. In cutting down on the growth I seemed to divide one layer of peritoneum only. Apparently the tumour presented itself outside—i.e., to the left of—the lesser sac of the peritoneum. The kidney was afterwards found immediately behind the cyst and the lesser sac of the peritoneum was not opened. A very thin-walled and obviously multilocular cyst was exposed, some of the loculi being of a deep venous blue colour and others almost white. The tumour had more the appearance of one of those rare congenital cystic degenerations of the kidney than anything else I had seen in this part of the abdomen. After enucleating the anterior part of the growth I aspirated and drew off about three-quarters of a pint of dark porter-like fluid and on pushing the cannula into another cyst a few ounces of opaque, straw-coloured, almost white fluid were extracted. Having secured the puncture opening made by the trocar, I enucleated the tumour until I was able to bring the bulk of it outside the abdominal walls. The smooth surfaces of the cysts were easily shelled out of the connective tissue, but the lines of union of the cyst were firmly adherent and had to be separated by scissors. In enucleating the base of the growth I noticed that the tail of the pancreas was closely adherent to its inner surface. As in the case operated on by De Wildt and referred to by Mr. Doran[2] it was only when the pancreas was seen that the true nature of the tumour was discovered, De Wildt's case having also been mistaken for a hydronephrosis. As the tumour was very multilocular and appeared to have solid portions in it which, however, afterwards proved to be small cysts, and as its growth seemed to have been rapid, I thought it was probably of a malignant nature, and I considered it wiser to remove the tumour, if possible, than to drain it, especially as the exposed pancreatic tissue appeared to be quite healthy. The tail of the pancreas to the extent of about two inches was intimately connected with the tumour, but part of the attachment was by connective tissue only. The growth had developed from the upper and posterior surface of the pancreas and a considerable portion of the cystoma had still to be enucleated from the back of the loin pouch. During the necessary manipulation a cyst burst in the deepest part of the growth and several ounces of dark-coloured fluid escaped. This was caught in my hand or in sponges by my assistant, Dr. Andrew Elliot, so that very little, if any, soiled the tissues. The posterior part of the attachment to the pancreas was so intimate that the pancreatic tissue had to be divided in order to get the tumour away. There was no pedicle, but when the connective tissue union between the gland and the tumour was separated by making traction on the latter the pancreatic tissue was drawn forward so as to form a kind of cone and through it I passed a double ligature. The two ligatures were carefully interlocked and tied, one on each side of the transfixed piece of tissue. The growth was then cut away and I noticed a very large vessel about the size of the radial artery in the tied portion of pancreatic tissue. Numerous ligatures of fine silk were applied to the divided attachments of the cysts which had been temporarily secured by pressure forceps. When all hæmorrhage appeared to be arrested the parts were allowed to drop into their proper position at the back of the abdomen and it was then immediately obvious that there was very free hæmorrhage. This was at once arrested when the parts were again drawn forwards, the traction being sufficient to occlude the vessels. Obviously it was not wise to transfix and tie large pieces of tissue and for a short time I feared I should fail altogether to stop the bleeding. It was with the greatest difficulty that I managed to see the parts in a sufficiently relaxed condition to discover and secure an artery in the pancreatic tissue which spouted freely close to the portion tied by transfixion. The securing of this vessel reduced the hæmorrhage, but some oozing continued until, with a needle on a handle, I passed a continuous suture over another portion of raw pancreatic tissue from which the oozing seemed to come. By these means the bleeding was arrested so thoroughly that when I had inserted the sutures in the abdominal wall and had ascertained that the spleen and left kidney were present and apparently normal the divided tissues were still very dry. I therefore closed the abdominal cavity without drainage. I carefully noted that in case there should be evidence of an accumulation of any kind in the course of convalescence it would be very easy to drain the cavity from which the tumour had been removed through the back of the loin close to the twelfth rib.

During the first forty-eight hours after the operation the patient had a good deal of discomfort from flatulence and towards the end of the first week she seemed more feeble than patients who have undergone an abdominal section usually are. The highest temperature was 102° F., recorded on the second night after the operation, and it was never above 100° after the eighth day. After the third week the temperature was normal. The highest pulse was 106, recorded the night after the operation. The urine passed in the first sixteen hours contained albumin, more in the first specimen than later. Since then the urine has been free from albumin. Sugar has not been detected in the urine and there have been no signs of diabetes. There has been at times some tenderness in the situation of the tail of the pancreas which has been aggravated by the administration of food and relieved by antispasmodics. Otherwise convalescence has been uninterrupted. Mr. Shattock has kindly sent me the following description of the tumour, in which he finds "no evidence of malignancy": "A thin-walled cyst which was removed from the pancreas; it measures about six inches in its chief diameter and is multilocular. Some of the larger compartments communicate with certain of the lesser by circular, sharply-defined apertures, due probably to atrophy of the intervening partitions. The interior of many of the cavities is blood-stained from hæmorrhage. During the operation much of the fluid was withdrawn by aspiration from two of the chief loculi; that from one was quite clear, that from the other blood-stained. The somewhat ropy, dull-brown mixture of the two was found to be strongly amylolytic when tested on starch solution."

This case illustrates very well some of the features of pancreatic cysts. As in many of the others on record the nature of the tumour was not recognised before the operation. Indeed, it seems to me that a positive diagnosis could only have been made by withdrawing some of the fluid and examining it. This proceeding should never be resorted to except in cases in which an exploratory operation is not permissible on account of the debility of the patient. To put a trocar into an abdominal tumour of unknown nature may lead to dangerous hæmorrhage or to the escape of fluid into the peritoneal cavity, with the possibility that the escaping fluid may be intensely irritating. An exploratory puncture may also lead to the diffusion of septic matter or of malignant disease previously encapsuled, and there is in addition the risk of injury to important structures. In the case of pancreatic cysts, for instance, the stomach and colon have been found so flattened on the front of the tumour as to give a dull note on percussion and the stomach has actually been perforated in aspirating one of these cysts. Any one of these dangers is of sufficient importance to outweigh all the advantages to be gained by puncture and to determine a decision in favour of performing an exploratory operation except under the most exceptional circumstances. Moreover, in the case I have related there is a strong probability that if a certain diagnosis of pancreatic cyst had

[2] A paper read before the Medical Society of London on Dec. 13th, 1897. See THE LANCET of Dec. 18th, 1897, p. 1591.

been made by an exploratory puncture or by other means drainage through the loin might have been considered the proper treatment and it is fairly certain that drainage would have done no real good in the case of a tumour with so many loculi. The error in diagnosis may therefore be looked upon as a fortunate circumstance in this case. I think there can be no doubt that when a pancreatic cyst has been diagnosed and drainage has been decided on the opening into the cyst should be made from the loin if the tumour presents in that position on either side. But the diagnosis should first be verified by abdominal section. Drainage through the loin is easy and as the cyst contracts it naturally falls backwards and closes on the opening, whereas if the cyst be attached to the lips of an incision in the anterior abdominal wall and drained thus it must form a long, and perhaps a funnel-shaped tube across the abdomen, difficult to drain and possibly a source of other troubles as it contracts. Some of the drained cases are reported as being cured in a few weeks; but others have taken a very long time to heal or a permanent sinus has been left, and in one case[3] malignant disease developed around the orifice of the sinus.

A characteristic feature of these tumours is the liability to hæmorrhage into them. Before I saw the case just related the patient had been taking much exercise on horseback and the character of the fluid in the cysts showed clearly that hæmorrhage had taken place into some of the loculi. There can hardly be a doubt that the rapid increase in the size of the tumour was due to repeated hæmorrhages and that the extreme tenseness of the cyst at my first examination which made me think it was a solid growth was caused by a recent escape of blood. Pancreatic cysts have very frequently been associated with injuries, and it has been supposed that they are retention cysts caused by obstruction of a duct from inflammatory contraction of its walls. But Senn showed that very little dilatation followed experimental obliteration of the duct and that a part of the gland physiologically separated from the main duct underwent simple atrophy. He and Cathcart have suggested that these cysts are due to rupture of the tissue of the gland, the formation of an adventitious membrane and the continued escape of blood and pancreatic secretions into the cyst thus formed. It is difficult to imagine how such a tumour as that which I removed could have formed in either of these ways. The existence of many loculi in the growth and the fact that some of the smaller loculi grew from the inside of the wall of larger ones are I think inconsistent with either of these modes of development. It seems to me that the tumour which I show, and which I have presented to the museum of the Royal College of Surgeons of England, is a true neoplasm.

Another question is suggested by the consideration of these cases. If pancreatic cysts are caused by an accidental laceration of pancreatic tissue followed by the effusion of blood and pancreatic secretions into an adventitous sac there must be some risk that a surgical wound of the organ may also give rise to a cystic development. It seems to me, therefore, that a patient should be cautioned particularly to avoid exertion and excitement for a prolonged period after the pancreas has been wounded during an operation. A recognition of the possibility of such a development might lead to a favourable prognosis if there should appear to be a recurrence of a pancreatic cystic growth which had been removed. Simple drainage would be the obvious treatment, and it is a question whether it would not be wise in all cases to drain the wound after such an operation as I have described.

This case is the only one of pancreatic cyst that I have seen with the exception of that related by Mr. Doran. His report and the reports of similar cases indicate that in many instances the complete removal of such cysts is quite impossible. Moreover, single cysts have frequently been cured by drainage. Obviously it would not be right under these circumstances to attempt to enucleate every pancreatic cyst, and it seems to me that those which are directly due to injuries must be specially unsuitable for complete removal. When the tumour is multilocular, however, and when it is connected with the pancreas by a comparatively small surface, it would appear to be proper treatment to effect a complete excision. In each case the decision as to which course to adopt should be reserved until the abdomen is opened. There can be little doubt that as my patient has recovered from the operation, complete removal of the tumour in her case was more satisfactory than a partial excision with drainage would have been. In a debilitated patient, on the other hand, an operation of this kind would be a very dangerous and probably an unjustifiable one.

These cysts are very rare. Dr. Hale White has recorded[4] that in the years 1883 to 1894, both inclusive, nearly 6000 post-mortem examinations were made at Guy's Hospital and that pancreatic cysts were found in only four cases. One of these was a case of hydatids, so that there was only about one case of pancreatic cyst in every 2000 necropsies. My colleague, Mr. Doran, has given us a most interesting *résumé* of the published records of cysts of the pancreas which have been treated by operation.[5] He tells me that he has found some 112 cases and that the tumours were completely removed in about a dozen only of these, the others being drained. The exact number of complete excisions is uncertain because in one or two instances the report does not state definitely whether the removal was complete or partial. My case seems to be the second case reported of complete removal of one of these cysts in this country, Mr. Clutton's in the St. Thomas's Hospital Reports, 1893, being the first. Most of the recorded cases of complete removal have recovered, but the operation hardly seems so safe as might be inferred from this fact. Trouble in arresting hæmorrhage has been met with frequently, and my case is interesting as showing that although I had very serious cause for anxiety on this score all hæmorrhage from the divided pancreatic tissue was completely arrested. The chief difficulty was to see and manipulate the parts—a difficulty which I have frequently encountered in dealing with hæmorrhage in the pelvis.

My friend Dr. Malcolm Mackintosh has made an interesting report[6] which indicates one termination of such a case as that I have related when the tumour is not treated surgically. The case was one of severe illness, commencing suddenly almost immediately after the patient, an apparently healthy man, had lifted a heavy sack. Symptoms began with "pain at the lower border of the ribs on the left side in the line of the nipple." This was followed by fever (102° F.), dyspnœa, dulness of the base of the left lung, distant respiratory murmur, diminished vocal fremitus and resonance, with slight cough and scanty expectoration. A coarse crepitus was heard over the whole of the dull area at the end of inspiration. After three weeks in bed the man got well and resumed work. During the illness there was no condition pointing to the necessity for examining the urine for the presence of sugar, and this was not done. Five months later the patient was seized with headache, backache, and pain in the left loin, with a temperature of 102° F. and a feeble pulse beating 120 to the minute. Four days later the whole of the base of the left lung both in front and behind was dull on percussion and the apex beat was displaced to the right of the sternum. The presence of fluid in the pleura was diagnosed. Next day sugar was found in the urine, and for four days from 140 to 200 ounces of urine loaded with sugar were passed in the twenty-four hours. The upper part of the abdomen could not be satisfactorily palpated owing to distension of the hollow viscera. On the twelfth day of the illness fifteen ounces of odourless, reddish-brown fluid were removed from the left pleural cavity, but without relief, and the patient died two days later. The post-mortem examination showed recent pleuritic adhesions over the base of the left lung. The whole of the organs occupying the left half of the abdomen were matted together by old strong adhesions. Below and behind the spleen a large fluctuating mass was discovered "containing about two pints of thin, sticky, slimy-looking fluid, none of which, unfortunately, was preserved for examination. The cyst was multilocular. ..... The pancreas was almost entirely destroyed, the only trace of it that could be found being a small piece of pancreatic tissue in the upper and posterior part of the wall of the cyst." The other organs appeared healthy. Dr. Mackintosh inclined to the belief that "a previously existing pancreatic cyst had taken on inflammatory action which spread to the tissues in the vicinity."

The fluid in some of these cysts is very irritating. Dr. Churton recorded[7] that although "the finest needle of a small exploring syringe" was used in aspirating a pancreatic cyst "a circumscribed peritonitis appeared to result" from the puncture. Mr. Cathcart[8] used a hypodermic syringe to

[3] THE LANCET, Aug. 8th, 1891, p. 291.

[4] THE LANCET, Dec. 26th, 1896, p. 1805.
[5] Brit. Med. Jour., Dec 18th, 1897, p. 1779.
[6] THE LANCET, Oct. 24th, 1896, p. 1149.
[7] Transactions of the Clinical Society of London, vol. xxvii., p. 246.
[8] Edinburgh Medical Journal, 1890, p. 17.

explore one of these cysts, and almost immediately the contents of the tumour flooded the peritoneal sac, giving rise to intense pain. In my case, the cyst walls were very thin, and a blow might easily have caused a rupture and effusion of the contents into the connective tissue around, followed by inflammatory symptoms, possibly of an obscure or misleading character, like those in the case I have just quoted. Under such conditions a correct diagnosis could be made only by an exploration of the abdominal cavity, and this was certainly not justified under the circumstances described by Dr. Mackintosh.

The possibility that a tumour may be a pancreatic cyst would therefore appear to be a special reason for carefully considering whether it is practicable to cure it by surgical means and for making an exploratory incision at an early stage of the disease in cases of doubt.

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ON REST, SLEEP, AND WORK AND THE CONCOMITANT CHANGES IN THE CIRCULATION OF THE BLOOD.

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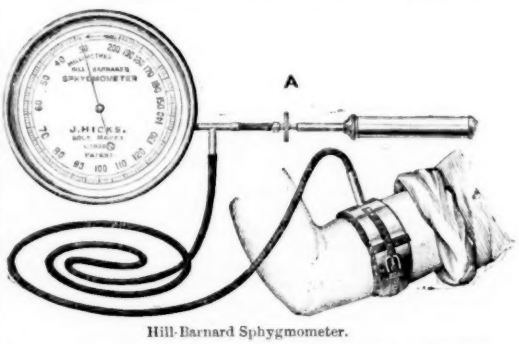
IN a recent number of the *Journal of Experimental Medicine* Howell[1] has published some plethysmographic tracings. These tracings are of great interest since they were taken continuously during the whole period of a night's sleep. Preparing for the ordeal and to ensure the certainty of sleep overtaking him by previous late hours and hard muscular work he succeeded, in spite of the discomfort caused by enclosing his arm in the plethysmograph, in sleeping for some five hours. The tracings show that the arm expanded as sleep supervened reached the maximum of expansion in the course of the first hour or so and remained expanded throughout the whole period of sound sleep. It was only when the waking state was near that constriction of the limb became again evident. If, however, the awakening was partial and the professor, after a period of drowsiness, sank once more into sleep constriction failed to appear and the arm remained expanded. These experiments, confirming the previous records of Mosso,[2] prove that there is during sleep a determination of blood into the limbs. Taken in conjunction with the observations of Kennedy,[3] Durham,[4] Hughlings Jackson,[5] Mosso, Hutchinson and Elder,[6] and others on the cerebral circulation they support the conclusion that sleep is associated with a condition of cerebral anæmia. In children "during sleep the mean intracranial tension seems to be lessened, the fontanelle sinks and its pulse-wave is small." In adults with defects of the cranial wall the same observations have been repeatedly made. The pia mater and fundus oculi exhibit enlargement of the veins, arterial and capillary anæmia. Moreover, abundant evidence exists derived from experimental observations, which prove that sleep in animals is associated with cerebral anæmia. Tarchanoff's[7] experiments on puppies may be specially mentioned. After trepanning the cranium he observed the condition of the pia mater both in the waking and sleeping state. Tarchanoff estimates that the arterial pressure in dogs falls from 30 to 50 mm. Hg during sleep. Regarding these well-established and striking facts Howell, like many others, is inclined to believe that sleep is caused primarily by the diminution of cerebral blood-supply which results from the relaxation of tone in the vaso-motor centre and the consequent fall of the arterial pressure. Fatigue of the vaso-motor centre is supposed to be induced by the constant instreaming of sensory impulses during the day's activity. These impulses produce reflex pressor effects and keep up a constant excitement of the centre. When the centre is exhausted the tone of the blood-vessels relaxes, the arterial pressure falls, the brain becomes anæmic, and sleep ensues. I myself[8] have maintained somewhat of a similar view. In my book on "The Cerebral Circulation" it is stated that "the vaso-motor centre is the hub around which turns the wheels of a man's active mental life." I have shown that if the compensatory effect of the vaso-motor tone be deficient the blood is determined under the influence of gravity to the dependent parts and the circulation through the brain becomes in the erect posture deficient. My opinions were strengthened by those of George Oliver,[9] who from the results of arteriometer measurements has concluded that the diameter of the radial artery is markedly diminished in the erect posture during fatigue.

Unfortunately the readings of the arteriometer are, as H. Barnard, J. H. Sequeira, and I[10] have recently demonstrated, somewhat vitiated by the amount of distension of the venæ comites arteriæ radialis. If these veins be congested they may become larger than the radial artery. In such case the instrument does not give the true diameter of the artery. To gain further insight into this question I have been recently studying the effect of rest, sleep, and work on the arterial pressure. The observations have been made on healthy children and young adults by means of the Hill-Barnard sphygmometer. This instrument records with accuracy and is extremely simple and easy to use. By its means I have recorded my own arterial pressure hour by hour and from day to day. The instrument consists of: (1) a leathern armlet inside which is fastened a flaccid rubber bag; (2) a force-pump provided with an escape valve (A); and (3) a pressure gauge graduated in millimetres of mercury. In using the instrument the method is as follows: (1) the armlet is strapped firmly round the upper arm; the rubber bag is thus brought into close contact with the skin; (2) the exit tube of the rubber bag is connected by means of a T-tube with the pump and the pressure gauge; and (3) the pressure is raised within the rubber bag and gauge by means of the pump until the point is found where the index of the gauge exhibits the maximal cardiac pulsation. This point indicates the mean arterial tension. In taking the observations the right arm should be used as it gives the larger pulsation since in right-handed people the right brachial artery is the larger. The arm should be placed in a passive, half-extended position with the armlet in the same horizontal plane as the heart. The latter precaution is essential to avoid the hydrostatic effect of gravity which would otherwise introduce error into a series of comparative readings. When the mean pressure within and without the brachial artery is the same the wall of the artery is at the systole and diastole of the heart able to oscillate with the greatest freedom. Thus, theoretically, the maximal oscillation is an accurate index of the mean arterial tension. It is proved to be so by simultaneous records of arterial pressure being taken in the dog by means of the sphygmometer on the one hand and the mercurial manometer on the other hand. The instrument can in adults be applied, but not so well, to the leg just above the ankle or in children round the thigh. It is easy to determine by observations taken in subjects in the sitting position, both from the ankle and from the upper arm, that the arterial pressure in the former place is higher than in the latter by the height of the hydrostatic column of blood which separates the two points. This is an excellent proof of the accuracy of the instrument. The records taken by the sphygmometer in the waking and sleeping states prove that in the latter condition the arterial pressure falls very



Hill-Barnard Sphygmometer.

[1] Howell: Journal of Experimental Medicine, vol. ii., 1897, p. 313.
[2] Mosso: Ueber den Kreislauf im Gehirn, 1881; Die Temperatur des Gehirns, 1894.
[3] Kennedy: Dublin Journal of Medical Science, 1877.
[4] Durham: Guy's Hospital Reports, vol. vi., 1860, p. 149.
[5] Hughlings Jackson: Medical Times and Gazette, 1862.
[6] Hutchison and Elder: Edinburgh Hospital Reports, vol. iii., 1895, p. 280.
[7] Tarchanoff: Archives Italiennes de Biologie, tome xxi., 1894, p. 318.
[8] Cerebral Circulation, 1896, p. 148.
[9] George Oliver: Pulse Gauging, 1895, p. 15-32.
[10] L. Hill, Barnard, and Sequeira: Journal of Physiology, vol. xxi., 1897, p. 147.

decidedly. This is shown by the following typical result. At 11 A.M. when in full activity the pressure in one individual, when taken in the sitting posture, averages from 120 to 125 mm. Hg and the frequency of the heart beat 64. Asleep in bed at 11 P.M. the pressure averages from 90 to 95 mm. Hg and the pulse rate 60. At first sight it would appear that such result is confirmatory of the view that sleep is occasioned by cerebral anæmia, but on further examination it becomes evident that the fall of the arterial pressure is concomitant with sleep rather than that it is the cause of sleep. From personal observations made from hour to hour throughout the day it has become clear that the fall of arterial pressure is invariably associated with warmth and rest in the horizontal posture. Even in the sitting posture such a fall may occur given the conditions of rest and warmth. Moreover, when lying awake in the morning the fall of pressure is as great as when lying sleepy at night; that is to say, so long as the subject remains quiet and in the recumbent posture.

It is possible to sit working in the morning and to find one's pressure as low as it is registered to be when sitting overcome with sleepiness in the evening. The following results taken from typical days bear out these statements:—

Example I.

Time.	Condition.	Position of body.	Arterial pressure.	Pulse-rate.
			mm. Hg.	
7.0 A.M.	Awake, warm in bed.	Horizontal	95	62
7.3 A.M.	Sitting out on side of bed.	Sitting	108-110	64
7.5 A.M.	After walking a few steps.	Sitting	115-120	64
7.30 A.M.	Dressed; sitting quiet.	Sitting	105	64
11·45 A.M.	Working by fire.	Sitting	103	64
8·45 P.M.	Resting by fire; sleepy.	Sitting	103	64
10.30 P.M.	Warm and drowsy in bed.	Horizontal	95	64
	Example II.			
9.30 P.M.	Awake in bed.	Horizontal	108	60
11.0 P.M.	Sound asleep.	Horizontal	105	—

The arterial pressure, like the pulse-rate, is more affected by muscular activity than by any other cause except perhaps by mental excitement. That this is so is shown by the following observations:—

Example III., to indicate Result of Mental Excitement.

Time.	Condition.	Position of body.	Arterial pressure.	Pulse-rate.
			mm. Hg.	
1.30 P.M.	Before lunch; quiet.	Sitting	103-105	64
4.30 P.M.	Engaged in discussion and excited.	Sitting	130-140	84
	Example IV., to illustrate Mental Quiet.			
1.30 P.M.	Before lunch; quiet.	Sitting	103-105	64
4.45 P.M.	Quiet after mild exercise.	Sitting	103	74
	Example V., to illustrate Mental Excitement.			
8.40 P.M.	Reading an exciting book at a great rate.	Sitting	125	80
	Example VI., to illustrate Mental Quiet.			
8.50 P.M. (following day).	Resting; talking quietly; unexcited.	Sitting	108	64
	Example VII., to illustrate Result of Muscular Activity.			
11.0 A.M.	Reading; quiet.	Sitting	98	64
11.10 A.M.	After running 400 yards fast; panting.	Sitting	120-130	100
11.20 A.M.	Resting.	Sitting	110-115	100
11.30 A.M.	Resting	Sitting	100-103	96
12.30 P.M.	Resting.	Sitting	90-95	80

After a short period of mild exertion, such as is caused by the act of standing up or lying down, the pulse-rate is accelerated momentarily by 10 or 15 beats. It rapidly returns to its former rate on resuming a position of rest. After a period of severe exertion the pulse-rate, as is well known, takes an hour or more to return to its normal rate. Example VII. shows how rapidly the pressure returns to its normal level. In twenty minutes this was accomplished whilst the pulse-rate was still high. Ultimately, as is always the case after muscular exertion, the pressure reaches a level lower than normal. As regards the normal activity of a working day, records taken from observations upon myself show that my tension in the morning is usually from 120 to 130 mm. Hg, while on a holiday it averages from 105 to 110 mm. Hg. On returning home in the evening after a hard day's work my tension at 6 P.M. is from 130 to 140 mm. Hg, while at the same time on a holiday it is from 115 to 120 mm. Hg. In the case of a mechanic, whose pressure is normally when at work at about 4 in the afternoon about 130 mm. Hg, after working all day long in fog and gas and feeling nervously strained I found that his tension had risen to from 140 to 145 mm. Hg. While the fall of arterial pressure is always concomitant with sleep the feeling of mental or bodily strain seems to be as constantly accompanied by high tension. Records have been made both by Mr. Soltau[11] and myself on the arterial pressure in individuals at intervals of a few minutes while they slowly sank into sleep. My wife has made similar observations on myself. No change of arterial pressure occurs; that is to say, the pressure is as low while the subject lies quiet and warm as when fast asleep. This being so it is not possible to ascribe the causation of sleep directly to the fall of pressure.

It may be at this stage useful to summarise the facts which are known concerning sleep. 1. *Respiration.*—(*a*) The number remains unaltered per minute; the movement becomes shallow and thoracic in type. (*b*) The amount of inspired air per minute is lessened by from half to two-thirds. (A man awake in bed inspired 5 6 litres per minute; asleep 1·75 litres per minute.[12]) (*c*) The output of CO_2 is diminished by from half to two-thirds. (A man resting and on moderate diet has a day's output of 533 grammes and a night's output of 395 grammes. A man on moderate diet doing nine hours work has a day's output of 856 grammes and a night's output of 353 grammes.[13]) 2. *Circulation.*—(*a*) The blood congests in the limbs; (*b*) the venous system is engorged; (*c*) the arterial pressure falls; (*d*) the pulse-rate diminishes; and (*e*) the velocity of blood-flow decreases. 3. *Temperature.* The temperature falls during the night. The production of heat is estimated to diminish by from half to two-thirds. 4. *Nervous system.*—(*a*) The blood-flow through the brain is diminished; (*b*) the acidity of the cortex decreases; (*c*) the excitability of consciousness to external stimuli steadily decreases during the first one to two hours of sound sleep, after that period the excitability rapidly becomes almost as great as it is towards the end of sleep;[14] and (*d*) consciousness alone seems to be abrogated during sleep. The nerves and the special senses continue to transmit impulses and produce reflex movements. (Tarchanoff evoked reflexes from the lumbar cord of puppies as easily when asleep as awake. Any sense stimulus produces changes in the circulation of the sleeping man.)

It is obvious that the metabolism of the body is greatly reduced during sleep. This is only an extension of what happens during rest. From the recuperative effect of sleep it is clear that metabolism is greater than katabolism. In reference to these facts the more important mechanical theories which have been put forward concerning the origin of sleep may be examined.

1. *Chemical theories.*—(*a*) It has been held that sleep is owing to the collection of chemical fatigue products within the brain—e.g., lactic acid,[15] poisonous alkaloid substances[16]; and (*b*) that exhaustion of the store of intra-molecular oxygen is followed by sleep.[17] Consciousness has been supposed to depend on the atomic vibrations produced by the formation

[11] I am indebted for some of the observations on arterial pressure during sleep to the kindness of Mr. Harold Barnard and Mr. A. B. Soltau. [12] Mosso: Archiv für Physiologie, 1878, p. 448.
[13] Pettenkofer and Voit: Zeitschrift für Biologie, 1866, Band ii., S. 459. E. Smith: Philosophical Transactions, 1859, vol cxlix., p. 715.
[14] Kohlschutter: Zeitschrift für Rat. Medicin, 1863, 1869.
[15] Preyer: Ueber die Ursache des Schlafes, 1897. Obersteiner: Allegemeine Zeitschrift für Psychologie, Band xxix., S. 224, 1872.
[16] Errera: Sur le Mécanisme du Sommeil, Bruxelles, 1895.
[17] Pflüger: Archiv für die gesammte Physiologie, Band x., S. 468, 1875.

of CO_2. Experiment fails to offer any support for these theories. Lactic acid when injected fails to produce sleep. It has been shown by Nabarro and myself [18] that the consumption of O and the production of CO_2 in the brain is as compared with that in the muscles very small.

2. *That sleep is due to cerebral anæmia.*—This theory, based on the analogy between sleep and the conditions of anæsthesia or coma produced by cerebral anæmia, has been most widely accepted. A dog may be rendered stupid and somnolent by ligaturing all the cerebral arteries [19] or by reducing the number of blood corpuscles to one-thirtieth of the normal—e.g., by bleeding and injecting serum in the place of blood withdrawn.[20] On the other hand, it has been shown in this paper by observations on arterial pressure that a fall of pressure is equally associated with bodily rest as with sleep. Howell himself found from the time he took up his position on the bed and attempted to sleep that the arm began to swell. Since the arterial pressure is as low when lying in bed in the waking state in the morning as in the sleepy state in the evening it is not just to ascribe the causation of sleep to the fall of arterial pressure. We might with as much reason ascribe sleep to the fall of temperature or to the diminution of the output of CO_2, both of which are equally concomitant either with rest or sleep. Moreover, the fall of pressure is by no means great enough to produce a state similar to that found on ligaturing the cerebral arteries. Normal sleep is neither coma nor syncope and the analogy between the three states is false. It must be borne in mind that the vaso-motor centre is made for the brain and not the brain for the vaso-motor centre. When the brain is excited to activity the arterial pressure is raised; when the brain is lulled to rest the arterial pressure falls. These changes in the circulation follow on the stimuli which arouse or soothe the brain, they are secondary to, not primary causes of, the cerebral activity. If the vaso-motor mechanism be damaged and the carotid arterial pressure is neither maintained during changes of posture nor does it respond to the needs of the brain, a pathological condition arises owing to the deficiency of the blood flowing through the brain. The cerebral circulation can, however, be enormously reduced before such a pathological condition is set up. Thus I have found frequently in dogs that no symptoms arise after ligaturing at one and the same time both carotid and both vertebral arteries. The collateral circulation through the anastomosis of the superior intercostal arteries with the anterior spinal artery has proved sufficient for the needs of the organ. Likewise in the monkey no symptoms arise after ligatures have been simultaneously applied to one carotid and one vertebral artery. It is of importance to remember that experimental and histological evidence has failed to demonstrate the existence of any cerebral vaso-motor nerves. It has been abundantly shown that the cerebral circulation passively follows every change in aortic and vena cava pressures.[21] Sleep cannot therefore be caused by any local constriction of the cerebral blood-vessels. More than this the application of a hot bottle to the feet, which is supposed to cause a determination of blood from the brain, is experimentally found to produce no noteworthy effect on the arterial pressure. Similarly cold compresses applied to the head prevent the onset of fatigue, but are experimentally found to produce no effect on the cerebral circulation.[22] The effects which result from these agencies are nervous and not vascular in origin. Similarly, no connexion is to be traced between the manifold cures for insomnia and the circulation. Thus insomnia may be equally well relieved by cold compresses to the head as by hot bottles to the feet. In most of us the horizontal position induces sleep, while others may when sitting up feel sleepy, but be cursed by insomnia the moment they betake themselves to bed. Babies are lulled to sleep by warmth—thus it is the habit of nurses to hold them, if wakeful, in front of the fire. Lord Monboddo, on the other hand, stripping himself naked, paced the room with the window open and then returned to his bed and to sleep.[23]

The expansion of the limbs during rest and sleep is to be ascribed to very simple causes. The return of blood from the veins is normally maintained by (1) the compressive action of the muscles; (2) the action of the respiratory pump; and (3) the constant change in the position of the limbs. Normally when the veins of a limb are examined they are found to be soft and not congested with blood. If, however, a limb be kept in one fixed posture the turgescence of the veins increases; this is markedly so if the limb be held for some minutes in the dependent position. In profound sleep the depth of the respiratory movement diminishes and the limbs remain flaccid and motionless; thus the venous return is impeded. At the same time owing to the cessation of external stimuli, the condition of warmth, and the horizontal posture the rate of the heart is lessened and vaso-dilatation occurs. As the waking state is neared the turgescence of the limbs is lessened owing to the increased tone of the muscles and to the restlessness of the sleeper. Each movement or deep respiration expresses the blood and produces a lessening in the volume of the arm. This is shown to be so by the examination of Howell's tracings. Since each movement of the body momentarily raises the vena cava pressure the brain is congested thereby, for the cerebral circulation passively follows every change in vena cava pressure. The flushing of the brain is secondary to the external stimuli which provoke the movements of the body, accelerate the heart, and increase the vaso-motor tone. At the same time these stimuli may awake the dormant consciousness. Carefully reviewing all the above facts we must, I think, conclude that the anæmia of the brain is caused by rest of the body and the cessation of powerful objective and subjective stimuli. It is the cessation of the latter that produces sleep.

It is to be remarked in reference to the analogy between the conditions of anæsthesia and sleep, which is often insisted upon, that while the administration of chloroform produces a pronounced fall of arterial pressure ether is followed by but a small fall and gas and oxygen by no fall whatever. Thus it is evident that it is not essential that the arterial pressure should fall in order to create a state of anæsthesia. These observations on anæsthesia have been taken by H. Barnard and myself by means of our sphygmometer.[24]

3. The remaining theories of sleep are based on histological evidence. It is held possible that the nerve-cell processes or dendrites are contractile and by pulling themselves apart break the association pathways and so sleep ensues.[25] In support of this we have the recent but not by any means fully substantiated observations that the dendrites are thrown into beaded contractions in morphia narcosis. These contractions are compared to those produced by anæsthetics on the pseudopodia of rhizopoda.[26] Ramon y Cajal[27] holds, on the other hand, that the neuroglia cells are contractile and as sleep supervenes they expand so as to interpose their branches as insulating material between the association dendrites. Against these theories may be placed the fact that consciousness alone is abrogated in sleep. The sense organs and the nerves remain awake and reflex movements are executed. The somnambulist may walk, balance himself on a roof, or cross a plank with precision; soldiers may sleep on the march and postillions on horseback. It is clear, then, the association of those dendrites which are necessary for the reception of stimuli and the transmission of complicated movements cannot be broken. Nobody can locate consciousness to any particular group of nerve cells. All the theories of sleep are equally confronted with the fact that in order to induce sleep—and, indeed, to induce it easily—it is only necessary that there should be fatigue of a very limited kind. Over bodily or mental fatigue is, in fact, often antagonistic. "A pedestrian may for some hours in succession plod along the road and be guiltless of anything like consecutive thinking, or the mathematician may for the same period be engrossed by figures and symbols and have the minimum of muscular exercise; each has earned his rest, and to both sleep may be equally sound and refreshing, but in each the activity of a large part of the brain has been kept comparatively in abeyance. Yet this too must be put to rest during sleep; our lives otherwise would be a constant dream."[28]

Sleep can be produced by a repeated stimulation of one kind such as the sound of running water or the dull voice of

[18] L. Hill and Nabarro: Journal of Physiology, 1895, vol. xviii., p. 218.
[19] L. Hill: Cerebral Circulation, 1896, p. 137 et seq.
[20] Von Ott: Archiv für Physiologie, 1882, S. 123.
[21] L. Hill, loc. cit., p. 73 et seq.
[22] Idid., loc. cit., p. 67.
[23] Boswell's Life of Johnson, Ed. Birkbeck Hill, iii., p. 168.
[24] L. Hill and Barnard: Brit. Med. Jour., 1897.
[25] Duval: Comptes Rendus de la Société de Biologie, 1895, p. 85.
[26] Demoor: Archives de Biologie, tome xiv., 1896. Verworn Allgemeine Physiologie, 1897, p. 382.
[27] Ramon y Cajal: Archiv für Anatomie, 1896.
[28] Cappie: The Intracranial Circulation, 1891.

a monotonous lecturer. It cannot be fatigue products that produce the sleep of the medical student at a 9 o'clock lecture. Children are lulled to sleep by rhythmical rocking or patting, by the monotonous cradle chant. Wordsworth in his sonnet tells how he endeavours to woo sleep by thinking of

> "A flock of sheep which leisurely pass by,
> One after one; the sound of rain, and bees
> Murmuring; the fall of rivers, winds, and seas,
> Smooth fields, white sheets of water, and pure sky."

On the other hand sleep is hindered by very slight external causes, such as change of bed, absence of habitual surroundings, presence of unusual slight noises. Not only the monotony of external stimuli but the absence of stimuli is powerful to provoke sleep; thus in Strumpel's[29] famous case a patient, an anæsthetic individual, was sent to sleep when his eye and ear, his two remaining sense organs, were closed. Further than this we seem to possess the power of putting the brain into compulsory abeyance. "Indians have a wonderful faculty of going to sleep. They seem to shut themselves up at will with a snap like slamming down the lid of a box with a spring and they are fast asleep in a second." Many men of great intellectual power possess this same faculty—noticeably we may quote Lord Brougham and Shelley. Other men, like Johannes Müller, have only to take up the recumbent position to immediately fall asleep. It seems then that consciousness can be abrogated either by a repetition of monotonous stimulation or by the voluntary withdrawal from stimuli, objective and subjective. In the dullard to produce sleep it is only necessary to either withdraw all external stimuli or to harp on one. On the other hand, the over-excitable intellectual man is kept awake not only by the intensity of the present but by the recollection of the past. He attempts to woo sleep not only by withdrawing from external stimuli, but by monotonously reviewing over and over again some one memory picture. Thus Southey records: "I listened to the river and to the ticking of my watch; I thought of all sleepy sounds and of all soporific things—the flow of water, the humming of bees, the motion of a boat, the waving of a field of corn, the nodding of a mandarin's head on the chimney piece, a horse in a mill, the opera, Mr. Humdrum's conversations, Mr. Proser's poems, Mr. Laxative's speeches, Mr. Lengthy's sermons. I tried the device of my own childhood and fancied that the bed rushed with me round and round. At length Morpheus reminded me of Dr. Torpedo's Divinity lectures, where the voice, the manner, the matter, even the very atmosphere and the streaming candle light were all alike soporific; when he who, by strong effort, lifted up his head and forced open the reluctant eyes never failed to see all around him asleep. Lettuces, cowslip wine, poppy syrup, mandragora, hop pillows, spider's web pills, and the whole tribe of narcotics, up to bhang and the black draught would have failed—but this was irresistible; and thus, twenty years after date, I found benefit from having attended the course." Our bed and bedroom and other habitual surroundings all impel us to sleep. The slightest change is sufficient to inhibit its onset. Howell could with difficulty fall asleep with his arm in the plethysmograph. I myself am effectually hindered by the strapping on the armlet of the sphygmometer. It is impossible to conceive that the monotonous repetition of a weak stimulus can either by exhausting intermolecular oxygen or by producing fatigue products within the brain produce sleep. It is equally difficult to believe that the influence of fatigue products if existent could be hindered by similar slight causes. At the same time there can be no doubt that fatigue does normally exhaust and predispose us for sleep. Moreover, fatigue must exhaust in some local way brain structure, for we daily fatigue ourselves by the contemplation of one subject and yet turn with fresh zeal to some entirely new form of mental activity. There is one fact that should not be lost sight of, that is the need of the bodily organs for rest. The heart, the respiration, the muscles of the eye, work on with greater activity whether we walk during the day or calculate. Sensations arising in these organs may help to produce fatigue of consciousness and lead us to seek rest. Consciousness may leap to life within the brain, but it is conditioned by sensations arising in every part of the body. If consciousness be a state of vibration produced in the atoms of brain structure by the impulses which stream in from the senses it is possibleto conceive that this particular state of vibration should be inhibited by either the withdrawal of stimuli or by the monotonous repetition of external or internal stimuli. But such speculations do not carry us far and the causation of sleep must still be regarded as metaphysical.

Frognal, Hampstead, N.W.

[29] Strumpel: Deutsches Archiv für Klinische Medicin, Band xxii.

SOME REMARKS ON RECTAL SURGERY.[1]

BY THOMAS BRYANT, M.CH. R.U.I.,
F.R.C.S. ENG. & IREL.,

CONSULTING SURGEON TO GUY'S HOSPITAL; SURGEON EXTRAORDINARY TO HER MAJESTY THE QUEEN.

BY the death of a valued surgical friend and enthusiastic artist, Mr. P. Y. Gowlland, who after being a surgeon to the London Hospital found his life's work in a speciality, I have become through his widow the distributor of a large number of drawings of anal and rectal diseases which are not only of great artistic and surgical value but at the same time of rarity, for the nature of the speciality does not readily lend itself to pictorial representation and it was only by an enthusiastic surgeon with artistic tastes that such a subject could have been adequately illustrated. The best of the late Mr. Gowlland's drawings are now in the possession of the Royal College of Surgeons of England, where they will always be open to the inspection of the Members of the College; but many are still in my hands to be disposed of according to my discretion. The possession of these drawings has therefore induced me at the present time to write the following notes on anal and rectal diseases and to anticipate the intention I had formed of adding at some future date a chapter upon these important affections to those I have already published under the heading of "Gleanings from Surgical Practice," for with my late friend's drawings to illustrate the subject my remarks may be made more useful.

And first of all it must be asserted, and most dogmatically so, that anal and rectal surgery is not as a rule well treated by the bulk of the medical practitioners of this country, for by the public most anal troubles are diagnosed as "piles" and the practitioner, when consulted, is too apt to accept the diagnosis of his patient and to treat him or her without making any local examination by which alone a correct diagnosis of the case can be made and a line of treatment laid down which may be expected to be successful. Under such circumstances cases are too often allowed to drift and although trivial cases may get well by such a process some become serious and the bulk of them pass into a chronic condition, entailing much unnecessary suffering and often serious consequences. It need hardly be added that the practitioner in so acting is not doing his duty or his best for his patient. When therefore a patient experiences so much anal or rectal distress as to induce him or her to seek advice it should be the invariable rule of the practitioner consulted to make a local examination and this should be of such a character as to afford sufficient information to allow of the laying down of a rational treatment from which benefit can be anticipated.

An examination need be neither a painful nor a humiliating proceeding; it may always be conducted decently and should be so conducted. The position I prefer to place a patient in is on a bed or couch on the left side with the thighs flexed. In this position, with the patient's buttocks well separated, a good view of the anus and its surroundings can be obtained and much knowledge can be acquired by mere inspection. If the skin about the anus and anal fold is healthy pruritus as a local affection may be dismissed with other external local troubles; if the skin be inflamed or irritated local rectal trouble should be suspected. If the anus is patulous some prolapse of the rectum may be present and it will be at once seen whether the prolapsed tissue is simply mucous membrane, hæmorrhoidal or polypus structure. If there is redundant skin about the anus and it is loose the antecedent prolapse of some tissue is suggested, and if the redundant skin is œdematous or otherwise infiltrated the recent prolapse of hæmorrhoidal or other structure or some lower rectal

[1] Read before the Medical Society of London, Monday, Jan. 24th, 1898.

disease is rendered probable. If fæces or discharge flow from the patient's anus the possibility of rectal stricture or rectal ulceration should be raised. If the anus be drawn tight and seems to be the apex of a cone the presence of an anal fissure or ulcer should be suspected, and if this condition is induced or increased on the surgeon attempting to separate the parts, and if, moreover, at the dorsal or perineal end of the anus a skin papilla is present, the suspicion of fissure would be confirmed. If any appearances of local inflammation are present they would be seen, as would any true external pile. All these points would be made out by mere anal inspection and careful painless examination; to learn more the introduction of the finger or speculum into the rectum may be required and this should be undertaken either at the examination which has been described or at a later period. As a rule the whole examination should be made at once, although its postponement should invariably be followed when an anal fissure or ulcer has been found or is suspected to be present, since the introduction of a finger or of a speculum past the external sphincter muscle would under these circumstances excite intense pain, consequently all further examination should be undertaken with the patient anæsthetised.

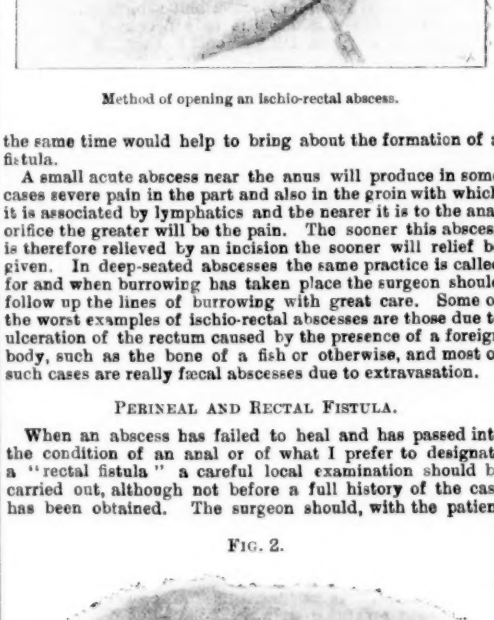
PRURITUS ANI.

This affection should always be regarded as a symptom of some local rectal trouble and not as a disease *per se*, although it is not possible in some few cases to find out readily its precise cause. It is well known to be present in cases of ascarides and it may be in every variety of rectal trouble, including external and internal piles, polypi, ulceration of the anus or rectum of every kind and anal abscesses. When none of these causes exist some irritating rectal secretion with or without a congested pelvic condition may be suspected, particularly in women with any uterine affection. Stimulating articles of diet and beer and spirits may also cause it, but what I now wish to impress upon the practitioner is that pruritus ani is commonly a symptom of rectal trouble and must be so dealt with. Recently I attended a woman who had suffered from anal pruritus for fifteen years unattended by other symptoms; she had taken much advice but had never been examined. On a careful investigation I found a sessile polypus the size of a haricot bean situated just within, but not protruding beyond, the sphincter. This I removed with an early and complete cure of her trouble.

ANAL AND RECTAL ABSCESS.

What has struck me most in the treatment of these cases is the undeniable fact that the majority of such abscesses have been allowed to take their natural course and have not been dealt with as abscesses in other parts would probably have been—that is, by an early incision. By the use of poultices and the necessary delay occasioned by their employment many cases which would have been regarded as trifling have drifted into a serious condition, and many a local abscess which, by a timely incision, might have been speedily cured has passed either into an extensive diffused abscess requiring many incisions or has degenerated into a condition of fistula with multiple openings, for the cure of which multiple incisions have been demanded. For it should never be forgotten that abscesses which form in the loose connective tissue about the rectum and ischio-rectal fossa readily burrow in all directions. Under these circumstances it should be a rule of practice to open them as soon as possible and this rule is as applicable to the small anal abscess with the view of saving pain as to the larger ischio-rectal abscess to save burrowing. Any abscess in these regions if opened early may be expected to heal without becoming a fistula, whereas if allowed to drift it will not only with certainty become a fistula, but probably a complicated one with many sinuses. A superficial anal abscess may be opened as any other in a superficial position; a deep-seated ischio-rectal abscess wants some care. With the patient placed on his side at the edge of a bed and anæsthetised the surgeon's finger, well and thickly lubricated with some lard ointment, should be introduced into his rectum and pressed sufficiently far into the bowel so as to reach above or behind the abscess cavity, the object of this movement being to enable the surgeon to press the abscess cavity well forwards towards the perineum and with a straight bistoury to make a free incision into it (*vide* Fig. 1). The cavity should then be irrigated with iodine water or some other antiseptic lotion and a piece of iodoform gauze introduced between the edges of the external wound for drainage purposes. There is no necessity for any plugging of the abscess cavity, for the hope of the surgeon is that the walls of the cavity when cleansed as they should have been will fall together and unite as speedily as possible; any filling of the abscess cavity with dressing would be enough to prevent this desirable result taking place and at

FIG. 1.



Method of opening an ischio-rectal abscess.

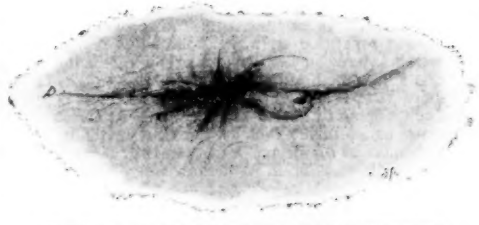
the same time would help to bring about the formation of a fistula.

A small acute abscess near the anus will produce in some cases severe pain in the part and also in the groin with which it is associated by lymphatics and the nearer it is to the anal orifice the greater will be the pain. The sooner this abscess is therefore relieved by an incision the sooner will relief be given. In deep-seated abscesses the same practice is called for and when burrowing has taken place the surgeon should follow up the lines of burrowing with great care. Some of the worst examples of ischio-rectal abscesses are those due to ulceration of the rectum caused by the presence of a foreign body, such as the bone of a fish or otherwise, and most of such cases are really fæcal abscesses due to extravasation.

PERINEAL AND RECTAL FISTULA.

When an abscess has failed to heal and has passed into the condition of an anal or of what I prefer to designate a "rectal fistula" a careful local examination should be carried out, although not before a full history of the case has been obtained. The surgeon should, with the patient

FIG. 2.



Sketch of a case of fistula in a man aged forty-three years.

placed on either his right or left side — the side selected being the one upon which the external orifice of the fistula is placed — begin his examination by carefully feeling the external parts for hardness and when such is found to exist its extent and direction should be noted and particularly with reference to its relations with the external opening or openings of the fistula, for where any hardness is present it is probable that there either is or has been some inflammatory action, and under these circumstances that there may be present some branch

sinus which although not suggested by the external orifices of the fistula has to be traced and laid open.

The question of the existence or position of the internal orifice of the fistula into the bowel has next to be considered and in the cases in which the patient states he has satisfied himself that wind passes through the external opening of the fistula the deduction is clear that an internal opening exists, although the precise seat of the orifice must still be obscure. To find the orifice of communication a carefully conducted local examination is essential. As a

FIG. 3.

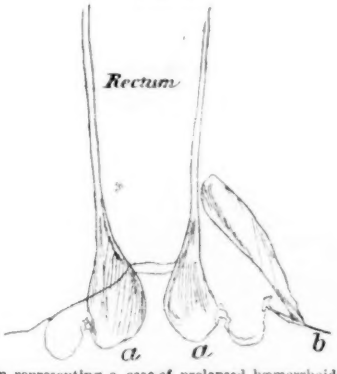


Diagram representing a case of prolapsed hæmorrhoids a) (a) with blind external fistula (b).

rule of practice it is generally well for the surgeon to pass his probe-pointed director through the external fistulous opening before he passes his finger into the bowel, for in passing his finger, however gentle the surgeon may be, some spasm of the anal sphincter must occur and in that way a difficulty is made to the passage of the instrument by the muscle throwing the sinus out of a right line. No force should be used in passing the probe and should an obstruction be met with it would be well to remove the probe and give it a bend with the concavity

FIG. 3A.

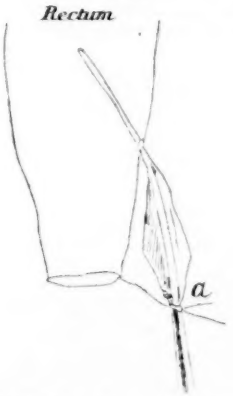


Diagram representing a case of blind internal fistula. a, Seat of external abscess where opened.

upwards, the bend tilting the end of the probe upwards against the bowel. When the probe has passed its supposed course the surgeon should then introduce his finger and thus determine the point he wished to elucidate. He has also if there are many external sinuses to make out whether each one has its own internal opening or whether there may be only one common opening, the more usual condition. He has likewise to satisfy himself that the sinus which communicates with the bowel ends at the internal opening or whether it passes up beyond and if so how far. He should also so examine the soft parts around the external opening or openings as to be sure that they are not undermined or the seat of other lateral sinuses, for in the treatment of a fistula every sinus should be found and as a rule laid open, branching sinuses, or what have been described as T sinuses, always requiring this treatment.

The internal orifice of the fistula should always be made out and with care it can generally be detected. It feels with the surgeon's finger in the rectum when recent like a depression in the walls of the bowel and when of long standing more or less indurated. In exceptional cases the walls of the rectum may be extensively ulcerated and under such circumstances the internal orifice of a rectal fistula

FIG. 3B.

Diagram representing a case of fistula with one external opening (a) and two internal openings.

will be difficult to recognise by the sense of touch. At times the internal opening is so large as to admit the tip of the finger; under these conditions previous ulceration has doubtless been present and has been the cause of the fistula or fistulæ, for where a large abscess has been the result of rectal ulceration several external openings about the anus are usually present. Injecting the external fistula with milk or some coloured injection will often be a help in detecting the presence or position of an internal opening. The accompanying diagrams taken from Mr. Gowlland's drawings will illustrate most of these points and variations of fistulæ.

As a rule the division of a rectal fistula when well performed is a successful measure and where failure follows it is

FIG 3C.

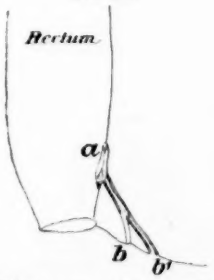


Diagram representing a case of fistula, with one internal opening (a) and two external openings (b), (b'). The patient, a man, was thirty-seven years of age.

as often due to the presence of constitutional causes as of local. The former may be difficult to overcome. The latter are mostly in the surgeon's power to control. Thus failure at times follows an operation when the surgeon has not found the internal aperture of the fistula and has thus left a sinus extending above the internal opening which for a successful

result should have been laid open. Failure likewise may follow any operative measure when any external sinus has been overlooked or not laid open, whether branch sinus or otherwise. It should also be pointed out that failure at times follows operation when the surgeon has been satisfied by dividing the sphincter and laying open a single sinus but has omitted to cut away overlapping edges of skin or scraping away old sinus tissue, particularly in tuberculous subjects. Failure also is sure to follow where the fistula is

FIG. 3D.

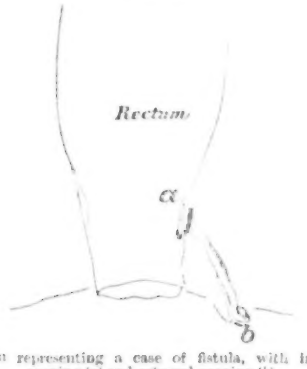


Diagram representing a case of fistula, with internal opening (*a*) and external opening (*b*).

the secondary effects of some rectal disease, such as extensive ulceration or any stricture of the bowel. In treating a blind internal fistula it is as a rule expedient to open first the abscess situated at the lower or perineal end of the sinus and subsequently to divide the external sphincter with the sinus channel.

In dressing a fistula after operation there is no need after the first dressing for any daily plugging of the wounds. Such wounds must of course be kept clean, but dressings are only

FIG. 3E.

Diagram representing a case of fistula with three internal and external openings. The shaded area was the seat of ulceration. The patient, a boy, was nineteen years of age.

needed to keep the edges of the skin wound from healing too rapidly before the deeper parts have filled up. The careful paring of the overlapping and undermined skin renders this old practice now unnecessary. The bowels should be kept open and the motion soft, not loose—for liquid stools are apt to excoriate and always give more local pain to wounds about the anus than do the soft and pultaceous motions.

Grosvenor-street, W.

THE MECHANO-THERAPY OF MOVEABLE KIDNEY[1]

BY A. SYMONS ECCLES, M.B. ABERD.

SINCE the year 1892 twenty-one cases of moveable or floating kidney with local pain and tenderness have come under my observation and treatment. Two cases prior to these have already been described in a previous paper[2] and notes of other five have been reported.[3] Of the twenty-one cases five were greatly improved by abdominal massage, exercises, and the application of a pad and belt, and one of these has been free from all discomfort for five years, another for two, whereas both had before suffered from pain and general disturbance at intervals for prolonged periods. Sixteen have been treated by "the rest cure" for periods varying from fourteen days to eight weeks, and of these seven were lost sight of within four months after treatment; one was a complete failure; and eight are here recorded in detail, having been selected as typical of the varying conditions under which, in males and females, moveable kidney may give rise to very marked suffering often without any knowledge on the part of the patient that nephroptosis existed or could cause the gastric, hepatic and nervous symptoms of which they complained. The results obtained in these twenty-one cases are for the most part so satisfactory that they bear favourable comparison with records of those treated by operation and in view of certain cases which have occurred there is something left in favour of employing milder means for the relief of nephroptosis than surgical interference involving either nephrorrhaphy or nephrectomy. Early diagnosis, reposition, and the maintenance of the organ in its normal place by methods which also conduce to the improvement of general health would appear to go far towards the relief of the patient from the necessity of having the kidney stitched into its place or removed from the body, as the advocates of early operation advise. At any rate sufferers from freely moveable kidney should first be subjected to treatment by rest and massage followed by exercises devised for improving the muscularity of the abdominal walls before they are exposed to the risks which exist, however small they may be rendered by the skill of the operator. No harm arises from the delay which may fairly be entailed by "the rest cure," and if any local surgery should afterwards prove to be necessary because of failure to relieve pain by the means here advocated the sufferer will be rather better than worse able to undergo operation. Especially does this appear to be the case when it is remembered that the best results obtained after operation can be secured only if "we should keep the patient lying in bed for at least six weeks, no matter whether the wound has healed by first intention or not."[4]

CASE 1.—A man, aged thirty-four years, was sent to me in March, 1892, by Dr. Bright, of Cannes. He complained of constant dyspepsia, vague (sometimes severe) abdominal pains, flatulent distension, constipation, backache (chiefly lumbar), occipital headache, nervous irritability, exhaustion, indecision, emotional distress, and loss of flesh and strength. There was no serious illness till a few months previously, when he was compelled to relinquish business as he could not concentrate attention on his work; but since boyhood he had been subject to sudden attacks of indigestion and aching all over the abdomen and loins. His height was 5 ft. 10½ in.; his unclothed weight was 9 st. 11½ lb. There were no signs of disease in the chest. The abdomen was concave, the reflexes were exaggerated, and there was apparently no subcutaneous fat. Some distension of the stomach was noted. The urine was pale, of specific gravity 1015; there was no albumin or sugar. Ten days after admission pain across the umbilical and lumbar regions led to the recognition of the right kidney lying transversely across the right lumbar region on a level with the navel, from which its proximal end was two fingers' breadth distant. The

[1] Abstract of a paper read before the Medical Society of London, Nov. 22nd, 1897.

[2] THE LANCET, July 18th, 1891, p. 118.

[3] Proceedings of the Royal Medical and Chirurgical Society, Feb. 27th, 1894. "The Practice of Massage," by A. Symons Eccles, p. 288, second edition.

[4] Kendal Franks on Moveable Kidney, Brit. Med. Jour., No. 1815, p. 895.

patient felt the sense of resistance and was alarmed lest he should have a tumour. The organ slipped away in the phantom-like fashion so often associated with its wanderings and could be felt gliding over the tissues of the back against which my left hand was firmly pressed between the crest of the ilium and the floating ribs. A pad and bandage were applied and readjusted thrice daily after massage of the abdomen and sometimes at night if the patient was sleepless from flatulent distension. Steady improvement in all the symptoms went on till at the end of six weeks the weight was 11st. 5lb., being a net gain of 21½ lb. At the end of October, 1892, he had three weeks' severe dyspepsia initiated by very imprudent irregularity of meals and carelessness in diet. The kidney was still apparently in its right place and after three weeks' treatment the weight, which had fallen to 10st. 12lb., rose to 11st. 4lb. In the latter end of 1893, having given up exercising any care in diet, gradually increasing dyspepsia with loss of weight led him to consult Nothnagel, whose report was as follows: "Enteroptosis, ren mobilis dexter, atonia ventriculi et intestinorum, symptomata nervosa hinc dependentia." After a three weeks' treatment he had to return home owing to domestic affliction and during 1894 much worry prevented great progress, but the belt and exercises relieved dyspepsia and apparently kept the kidney in place. In 1895 he was quite well, playing golf and travelling about Europe till October, when he was under my close supervision till January, 1896, and was free from all discomfort during that time. Since then he has gained flesh, his weight being now 11st. 6lb., and in every letter of a regular correspondence up to October, 1897, he makes no complaint of physical discomfort in spite of most arduous and responsible work.

So long as the patient kept the amount of packing material gained in his first period of treatment he was well; when from improper food, unsettled life, and great anxieties he lost a great deal of fat and flesh which had been gained the muscular walls of the abdomen lost tone, the usual support offered to the viscera was reduced so that the right kidney again became moveable until means were adopted for the replenishment of muscle and fat.

CASE 2.—A woman, aged thirty-seven years, was admitted in April, 1893. She had borne eight children, but was well in health till four years previously, when she suffered after a bad confinement from severe neurasthenic symptoms and a dragging pain in the back and loins, occasional nausea, and heart hurry. The spirits were fairly good and, save when the nausea and pain came on, she felt buoyant and happy. Physical examination revealed gastroptosis and a freely wandering right kidney. Examination per rectum showed palpable sigmoid prolapse, so that this case may be regarded as one of multiple enteroptosis. The unclothed weight on admission was 9st. 5lb.; after four weeks' treatment it was 10st. 1lb. The kidney was replaced at the beginning of treatment, was felt in its normal position at the close, again a week after, and again in December, 1893. In January, 1895, the clothed weight was 11st. 9lb., the stomach limits were normal, and the right kidney could not be felt more than usual on deep inspiration. The patient expressed herself as fit and well.

CASE 3.—The patient was the sister of Case 2, aged forty-six years, and was admitted in June, 1893, complaining of sick headaches, nauseating pain in the right lumbar and iliac regions, anorexia, insomnia, and prostration. She had mitral disease, a systolic murmur—loudest at the apex, audible in the left axilla and angle of the scapula,—and a diastolic murmur with slight thrill in the fifth interspace in the left mammary line where the impulse was situated. The murmur was of a to-and-fro character. Examination of the abdomen revealed nothing save that the right kidney was moveable and slipped in and out of place with a kind of click. She had found that when there was insomnia lying on the left side with the right knee drawn high up against the abdomen generally enabled her to sleep. The urine, which at first was scanty (from 15 to 20 ounces), highly coloured, loaded with lithates, with a specific gravity of from 1025 to 1032 and always a small amount of albumin, gradually became paler, less scanty (from 20 to 30 ounces daily), and only a trace of albumin was occasionally found coinciding with temporal headache three times during a month of treatment. No abdominal pain was felt after the first week or any nausea and faintness. The weight (8st. 5lb.) rose to 8st. 11lb. and the general condition seemed to improve, but thirteen months later she succumbed to pulmonary œdema after an attack of syncope.

CASE 4.—A woman, aged forty-four years, was treated in June, 1895, floating kidney having been diagnosed by Dr. Waddell six weeks previously, when she complained of frequently recurring severe pains in the hypochondriac, epigastric, and right lumbar regions, with loss of weight and flesh. Every morning on waking there was severe pain in the right lumbar region and across the navel to the other side. Gastroptosis and right nephroptosis with great tenderness of the kidney existed. The urine—sometimes pale and profuse, at others highly coloured and scanty—on the second day of treatment contained a quarter albumin, at other times occasional traces only. Not more than six pounds gain in weight resulted from treatment, but the patient being only 5ft. 3in. in height weighed 7st. 7lb. unclothed at the end of the course, during which no attempt to "over feed" was made. In November, 1895, I saw the patient again, the kidney could not be felt, and the lower border of the stomach seemed to be two fingers' breadth above the navel. In March, 1897, I again saw the patient, who was "quite well," and able to lead an active, useful life.

CASE 5.—This patient, a woman, had suffered much from fibroid tumour, both ovaries had been removed and since then there had been no hæmorrhage. The abdomen was scaphoid, the walls were very flabby, and there was slight gastroptosis and marked right nephroptosis. The urine contained an appreciable trace of albumin. On Oct. 14th, 1895, the unclothed weight on admission was 8st. 7½ lb.; eight weeks later on discharge it was 9st. 2½ lb. Attacks of palpitation—pulse 100 to 120—occurred at irregular intervals during the first week and insomnia was troublesome. After the first week very gradual improvement was noticed till after a month's treatment, when one night great agitation, heart hurry, and general abdominal discomfort led to the discovery that the kidney had slipped down and was lying across the right lumbar region on a level with the navel; albumin appeared in the urine again for a few days; thereafter uninterrupted improvement was made. Opportunities for examination have occurred at intervals down to February, 1897, and quite recent inquiries have elicited the fact that the patient, who had regained the power to enjoy active pursuits with steady increase in weight, still continues in excellent health.

CASE 6.—A man was admitted in October, 1895, suffering from a sense of strain and tightness over the small of the back, flatulent distension of the whole abdomen, nausea, constipation, and a sickening pain in the umbilical region with a sensation of dragging and weight in the right loin. In twelve months he had lost two stones in weight and he suffered from trembling fits, dread, and depression. The stomach was distinctly dilated. In the erect posture the abdomen was pear-shaped and the stomach dropped below the navel; there was therefore gastrectasia as well as gastroptosis associated with right nephroptosis. Ten years previously he had fallen in a race, felt great pain in the right side of the abdomen and loin, and passed blood in the urine for a week after. The unclothed weight was 9st. 10lb. on admission and at the end of five weeks' treatment 10st. 10½ lb. At intervals I have heard from this patient, whose mental and general condition improved *pari passu* with the gain in weight and muscularity of the abdominal walls. In the earlier part of 1897 he reported himself as very well and free from discomfort.

CASE 7.—A woman, aged twenty-seven years, was admitted in April, 1896, complaining of violent paroxysmal pain in the right side extending from the lateral region of the chest downwards into the iliac fossa, occurring at irregular intervals; and between the attacks there was dragging pain in the back, loins, and epigastrium, with palpitation, nausea, great depression, broken dreamful sleep, and supra-orbital headache. The catamenial period every fortnight increased the severity of the pain and any exercise brought on a paroxysm. She was quite well till six months before, when both parents were taken ill and died. She nursed them both and felt no ill effects till one day, when lifting one of the sufferers, she felt a wrench in the right side with sickening pain similar to the twisting paroxysmal pain since experienced. There had been little or no loss of flesh. In the right iliac fossa a firm rounded swelling could be felt which was tender and moveable. On deeper manipulation it slipped away and could be followed up into the right loin. On admission and again before the first monthly period the urine contained a noticeable quantity of albumin, but none after save a trace just before the second period, which occurred during six weeks' treatment. In spite of being well

nourished at the outset this patient gained 10 lb., becoming much firmer and rosy-cheeked. Up to date there has been excellent health and no recurrence of renal or digestive trouble.

CASE 8.—A woman, aged fifty five years, was admitted in October, 1896, complaining of painful aching in the right hypochondrium and various dyspeptic and nervous symptoms. On examination nothing abnormal could be found save a freely moveable right kidney. In a month of treatment 10½ lb. were added to the body weight and she left feeling well and strong being provided with an abdominal belt and renal pad. In January, 1897, I saw the patient, the kidney could only just be felt on deep inspiration and did not slip out. On the advice of Dr. H. Huxley, who sent her to me, she went to the south of France, whence she wrote in good health and spirits and again reported herself quite well in July, 1897.

It will be observed that in all these cases there were physical signs—local and general symptoms which are attributable to the dislocation and mobility of the right kidney; and, judging from the unfortunate consequences following disregard of this lesion and neglect of treatment in cases which have come under observation, it may be alleged that much suffering and chronic illness can be averted by means entailing none of the risks possibly incurred by operation. Moreover, there must be many nervous invalids reduced to a condition of chronic debility by nephroptosis who would not submit to operation if by any other means restoration to easy and comfortable health could be gained. For these "the rest-cure" affords good prospect of relief.

In these cases of floating or moveable kidney, no less than in other forms of enteroptosis with so-called functional disorder of digestion, the indications are to restore healthy tone and to induce the re-deposition of fat and flesh to the abdominal walls as well as to improve the nutrition of the viscera and replace the packing material of fat, which in many cases has vanished. This, in most instances, can be done by judicious combination of frequent massage of the abdomen and loins, carefully regulated diet, and finally gradually increased exercise, precautionary measures meanwhile being adopted by posture, rest, and mechanical support to prevent and counteract the tendency to displacement and undue mobility engendered by lack of proper support for the viscera.

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CONSIDERATIONS ON THE POSSIBLE INFLUENCE OF THE NERVOUS SYSTEM IN THE TISSUE-LIFE OF THE HIGHER ANIMALS.

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IN the following paper the attempt will be made to show that the possibility exists of assigning to the nervous system in the higher vertebrates a much more important and indeed universal influence in the general economy of the body than is usually conceded at the present time—to suggest that we may look to this source for the controlling force which governs all the nutritive functions of the tissues of such animals as well as their locomotor, vasomotor, and secreto-motor activities. For this purpose it will be convenient, first, briefly to point out that such a development of the power of the nervous system is in accordance with the recognised course of the evolution of higher from lower organisms, and then to consider the results which may ensue from the derangement of this controlling influence, from which results alone in the form of morbid processes we are enabled to infer the existence of such control.

It is unnecessary here to recapitulate all the stages of development shown in the different orders of the animal kingdom by which the original properties of the unicellular organism are divided among the various tissues of the higher animals. It is well known that the fundamental properties of nutrition and sensibility shown by amœba are divided into the complex processes of glandular secretion and muscular contraction, in each of which the reception and transmission of the stimulus is effected by the nervous system and the resulting chemical process thus set going takes place in the special cell. This stage of differentiation is reached in the invertebrate animals, and it is natural to ask whether no further step forward in the same process has been taken in the course of evolution of the highest animals of all—the vertebrata, and especially the mammalia, with man at their head. We see that in the recognised course of development there has been a tendency in dividing the functions of the cells to give to the nervous system the part of controlling the lower processes, as in the instance of the muscular and glandular activities. So it is in the direction of a still further extension of this principle that it is natural to look for a distinguishing feature of the highest animals.

Since all cells, of whatever kind they may be and whatever function they may perform, undergo waste and repair they must all possess in themselves the original and fundamental property of nutrition. This function may be logically divided as in the original instance into stimulus and result—the stimulus of food present in the circulating fluids and the resulting assimilation of the nutriment. It is then no long step in advance to suppose that here too in the highest animals the reception and transmission of the stimulus may be effected by the nervous system, which thus sets going the resulting chemical combination in the individual cells; in other words, that the nutrition of every cell in the body, and consequently the growth of every kind of tissue, is controlled by the direct action of the nervous system.

In the case of gland cells this fact is already recognised and admitted, since the process of the manufacture and emission of secretory products is merely the process of nutrition and excretion, of repair and waste, of anabolism and catabolism, to use the most general terms. We know that the emission of the cell product is directly controlled by the nervous system, since it has been definitely proved in the case of the salivary glands; and just as we have vaso-constrictor and vaso-dilatator nerves, or stimulant and depressant influences exerted on the heart by the sympathetic and vagus respectively, so it is reasonable to suppose that the anabolic as well as the catabolic process in the gland cell is produced by the stimulus of nerve force.

In the case of muscle cells the probability of direct trophic influence of the nerves is also very generally conceded. When a muscle is cut off from its motor nerve by injury or disease a much more definite wasting of its elements takes place than can be accounted for on grounds of mere disuse. The wasting that occurs in infantile paralysis or peripheral neuritis is an obvious instance of such a trophic influence on the muscles, while in the former disease the bones, too, seem to participate to some extent in the defect of nutrition. In the case of the heart muscle the action of the vagus and sympathetic above alluded to are maintained by Gaskell[1] to be due, the one to an anabolic and the other to a catabolic process in the cells produced by the action of the respective nerves.

The skin, again, is the seat of a very numerous group of phenomena which can only be explained on grounds of nervous influence, though it is always difficult to disprove the contention that these phenomena are due to vasomotor disturbance, put forward by those who deny true trophic influence. The best-known example of this group is found in herpes zoster, which not only follows the course of an intercostal nerve but often presents three distinct patches of vesicles corresponding to the cutaneous branches of the main trunk. If, with Head,[2] we must regard the distribution of this lesion as corresponding rather to a "spinal segment" than to the area supplied by a single nerve, the trophic influence is no less manifest. In localised scleroderma an equally well-marked confinement of the lesion to the area of a single nerve is often seen. In nævus verrucosus the limitation of the disease by the middle line of the body suggests a similar causation, while in another condition termed by Selhorst,[3] who describes it, "nævus acneiformis unilateralis" there is found a peculiar condition of the skin resembling acne with comedones, going on to actual ulceration, likewise strictly limited to one-half of the body. Cases of generalised scleroderma associated with muscular atrophy and trophic ulcers are recorded by Dreschfeld.[4] Other instances innumerable of neurotrophic

[1] Gaskell: Journal of Physiology, vol. iv., p. 43.
[2] Head: Brain, 1893, p. 7.
[3] Selhorst: British Journal of Dermatology, 1896, p. 419.
[4] Dreschfeld: Medical Chronicle, Manchester, January, 1897.

skin affection are found in dermatological literature.[5] General alopecia appears to follow in some instances upon mental strain and anxiety, and a curious case is recorded by Rauber[6] in which a condition of trichorrhexis nodosa occurred in one patient on separate occasions as the sequel of epileptic fits. Actual pathological changes in the nerves have been found in a case of erythema multiforme,[7] and in a case of primary sarcoma of the skin.[8] The pigmentation of the skin also appears to be affected by nervous causes as is seen in pregnancy and diseases of the abdominal sympathetic.

That adipose tissue is subject to trophic control is suggested by the phenomena of fat necrosis, which Rolleston[9] regards as associated with a lesion of the sympathetic system. Further, the persistence of the sucking pads in an emaciated child when all the other fat in the body is reduced to a minimum is apparently due to the action of some controlling force which maintains the nutrition of vitally necessary portions of the body while sacrificing the rest.

Of nervous influence on the growth of connective tissues we have little direct evidence. The modification of the growth of the bones in infantile paralysis has been already alluded to, and Jonathan Hutchinson[10] has shown specimens of skulls in which a definite enlargement of the bones occurred corresponding to the distribution of the fifth nerve. Perhaps we may some day recognise instances of perverted nervous control in such diseases as acromegaly, leontiasis ossea, and osteitis deformans. Further, the tissue forming the myelin sheath of nerve fibres themselves, often regarded as part of the nerve, is in reality connective tissue, and we see on dividing a nerve trunk that the first changes taking place in this are of an active character—multiplication of nuclei and increase of protoplasm. The nature of this change suggests that the nerve exercises a direct influence of a restraining character on the elements of the sheath which grow with undue rapidity when the nerve fibre is cut through and trophic control thus removed. It appears, then, that there are good grounds for believing that the nutrition of the glands, skin, and muscles, and perhaps the bones and connective tissue, is directly affected by the action of the nervous system, and it is only reasonable to follow this analogy to its legitimate conclusion and to believe that all tissues of the body alike, in man and the higher animals, are subject to the same guidance and control. The subject of trophic nerves has, however, been fully discussed elsewhere by far abler writers and the last word is by no means yet said on the subject. The tendency, indeed, among physiologists appears to be rather in the direction of denying than of accepting their existence. On the other hand, clinicians—not, let us hope, less scientifically minded, but seeing perhaps more of human and less of lower animal life—habitually find it necessary to assume this direct action of the nervous system to account for the phenomena of disease. Charcot's joints and perforating ulcers, the glossy skin and distorted nails of paralysed limbs, the brittle bones and spontaneous sores of the insane, unite to form a group not easily to be explained away on grounds of mere vaso-motor disturbance and failure to react to normal stimuli. And it must be confessed that in very many instances of trophic lesions vaso-motor disturbance is by no means so conspicuously present as we might expect it to be in order to account for such remarkable effects. It is not intended here, however, to discuss this question at length; enough has perhaps been said to show that there are at least many phenomena apparently pointing to the existence of neurotrophic influence. The main object of the present paper is to indicate a class of disease the origin of which has always been obscure and which may possibly admit of explanation on this ground.

In the examples already given the effect of a lesion of the nervous mechanism has been seen in diminished rather than increased cell activity—in lowered vitality rather than over-vigorous growth. If, however, the nervous system supplies a regulating force it is to be expected that its power will be exercised both as a stimulant and a depressant influence, and we must anticipate that defect of this control will be seen in exaggerated as well as deficient cell growth. An obvious instance of such an irregular growth is seen in tumour formation. At the outset we are led to inquire whether some defect of nervous control is not at the bottom of this process, by the fact that tumours have no nerves. From this fact we are naturally led to suppose that certain cells have become severed by some means from the control of the nervous system and that owing to their possessing sufficient vitality to grow by themselves, there results a mass of cells with independent life and unrestrained activity of growth. They are free from the central controlling force which guides the life of the general community of cells in orderly course and mutual subservience for the benefit of the organism as a whole: they become outlaws and rebels in the body politic.

This explanation has been already put forward to account for the origin of cancerous tumours by at least two writers by Marshall in the Morton Lecture on Cancer, 1889,[11] and before him by Inglis Parsons.[12] Neither of these authors, however, did more than indicate this possible explanation of malignant tumours, nor did they apply it to all tumours as a class, so that the present paper must find its excuse in the more general application of the theory herein set forth both to new growths and to vital processes in general. For it is impossible to separate malignant from simple tumours by any hard-and-fast dividing line. Typically no doubt, a malignant tumour grows quickly; it invades neighbouring parts by continuity of tissue, pushing its way into the lymph spaces, infecting lymphatic glands, and forming new foci of disease in distant organs. On the other hand, a simple tumour more often develops slowly surrounded by a capsule and does not invade or destroy except by pressure the parts by which it is encompassed. It forms no metastases and does not recur locally if removed. Yet there are instances, and these not so very infrequent, of structurally innocent tumours presenting malignant characteristics. Lipomata and fibromata may occur without capsules; chondromata may form metastases in the lungs if their matrix softens and portions of papillomata of the kidney may be implanted in the bladder and form fresh tumours there. On the other hand, in rodent ulcer, classed as a malignant tumour, no glandular infection or metastasis occurs. We must, then, in studying the causation of new growths, regard them as a whole and not seek to isolate any one group and put forward a special theory to account for its origin.

In this hypothesis as to the nature of tumours, we may find the explanation of many, if not all, the distinguishing features of the class. Their existence as useless excrescences naturally follows on the supposition that they are due to cells breaking away from that coördinating force which keeps all parts of the body in harmony, subordinated to a definite plan, and regulates their functions with regard to the needs of the organism. Their autonomy of growth is equally intelligible on this explanation, since there is nothing to restrain the development of the tumour but its dependence on the amount of nourishment available. In a starving animal the unimportant parts of the body waste, while those which are necessary for the continuance of life are supplied with nutriment at the expense of the rest. The heart and the central nervous system waste least, the fat most, and the other tissues in a reversed "order of merit," according as they are less necessary for the continuance of life. This is effected on the theory here enunciated by the nervous control to which all cells and tissues are subordinated. But under these circumstances a tumour does not waste; it is free from such control, and useless as it is its bulk remains the same or actually increases while the affected organism starves. Again the lack of function shown by glandular tumours, which consist of cells identical to all appearance with secreting cells but yet indolent and functionless, is at once seen to be due to the fact that no stimulus to secrete reaches their cells, no nervous energy calls out the inherent capabilities of their units.

The few facts known as to the origin of tumours and the theories by means of which previous observers have endeavoured to coördinate these facts are also consistent with the hypothesis here put forward. Thus according to Cohnheim's theory tumours originate in developmental defects—in masses of cells which have gone astray in the process of development and are thus displaced from their proper connexions. In this explanation we may see one way

[5] Cf. Severi: Clin. Dermosif. della Reale Università di Roma, January, 1896. Max Joseph: Archiv für Dermatologie und Syphilis, Band xxxi., Heft 3, June, 1895.

[6] Rauber: Virchow's Archiv, Band 97, p. 50.

[7] Rocca: Clin. Dermosif. della Reale Università di Roma, January, 1897.

[8] Campana: Ibid., March, 1897.

[9] Rolleston: Transactions of the Pathological Society of London, 1892-93, vol. xlv., p. 77.

[10] Hutchinson: Address at University College Hospital, THE LANCET, Oct. 11th, 1890, p. 789.

[11] Marshall: Morton Lecture on Cancer, THE LANCET, Nov. 23rd, 1889.

[12] Inglis Parsons: Brit. Med. Jour., April 27th, 18 .

in which it is possible for cells to become free from nervous control, for a group of cells thus situated, not forming part of the true plan of the body, may well fail to enter into connexion with the guiding authority. A second important factor in the etiology of tumours is found in the existence of chronic irritation at some point in the body, according to the theory of Thiersch. Now such a process of chronic irritation is accompanied by continual attempts on the part of the organism at repair of the injury produced, but the process of repair is constantly thwarted by the continuance of the irritation. In this way also groups of cells may come to exist cut off from their normal connexions; and, indeed, we may actually find microscopically that such, in fact, takes place at the edges of chronic ulcers or lupus of the skin. Here there are found masses of epithelial cells lying isolated among the granulation tissue, cut off from the outer epithelium in which they originated. The origin of epithelioma in such positions is well known. Nor is this connexion of the nervous system with the origin of tumours a mere unsupported hypothesis, for an actual example of a case in which definite changes in the nerves were associated with the appearance of tumours is recorded by Professor Campana.[13] In a patient affected with primary sarcoma of the skin there were found swellings on the nerves leading to the seat of lesion caused by the infiltration of the nerve with round cells and consequent degeneration of its fibres. These changes are regarded by the author as primary to the tumour formation. Another interesting disease in this connexion is osteitis deformans, in which there occurs an overgrowth of the bones of certain parts followed in very many instances by the appearance of malignant tumours—sarcomata. Here we may see first perverted action of the nervous system, and finally entire defect of the controlling function in certain localised areas.

Further, it is in the higher and more fully developed animals that tumours occur and most of all in man, whose tissues are most highly differentiated of all. Such we should indeed expect to find the case on this theory, since it is only in the higher animals that the nervous system has gained the power of modifying the nutrition of the cells—to some extent probably in all vertebrate animals, to the greatest extent, though not necessarily to the highest conceivable degree, in man himself. Thus in lower orders of animals the cells maintain their original power of ordering their own growth and nutrition on a definite plan, and the accidental displacement of such cells by violence or other cause does not lead to the excessive growth which constitutes tumour formation. In man, on the other hand, the cells are used to being controlled, and if they are accidentally severed from their nervous connexions they may grow over vigorously and irregularly.

Finally, we may thus see the reason for the ill success of therapeutic measures in modifying the growth of tumours. For if the tumour consists of cells similar to those of the rest of the body, differing only in freedom from control in the matter of nutrition and multiplication, it is evident that we cannot hope to modify its development by means of drugs. If we give depressing drugs to check the growth of the tumour we diminish at the same time the vigour of surrounding cells, by the resistance of which the growth of the tumour is kept in check; while if we give stimulating remedies to improve the nutrition of the body as a whole, we equally assist the growth of the tumour, which subsists on the same nourishing fluids as the rest of the organism.

Before leaving the subject one very obvious difficulty must be alluded to. It may be asked why it is that if tumours result from displacement of cells from their nervous connexion a tumour does not occur in all cases of skin grafting or other transplantation of tissue? In answer to this, two considerations may be urged. In the first place transplanted tissues though they may live and flourish for a time are ultimately in nearly all cases absorbed and disappear, and in cases of skin grafting it seems doubtful whether the implanted tissue is not finally replaced by epidermis from surrounding parts. But if this be not so—and there are undoubted instances of transplanted portions of tissue growing and not forming tumours—the explanation may be found in the old experiment of grafting the tail of one rat on to the nose of another, in which it was proved that a fresh nervous connexion was formed between the implanted tissue and the animal in which it was caused to grow. If such a new connexion is formed in these cases in which the transplanted tissue continues to live it is evident that no tumour formation can be expected to occur.

The most recent discovery on the subject of tumours, that of the influence of oöphorectomy on the involution of cancer of the breast, does not appear to throw any definite light on the theory here set forth. Two explanations appear possible of this interesting phenomenon: either that the ovary secretes some substance necessary for the nutrition of mammary cells—and cancer of the breast and its secondary deposits consist of mammary cells—so that when this substance is no longer supplied the breast atrophies and the cancerous nodules shrivel; or that the diseased ovaries pour into the circulation some deleterious substance which lowers the resistance of the body cells and so allows the aberrant cells of the cancer to establish themselves and flourish, while where this no longer takes place the resistance of the body is increased and the invaders are repelled. The latter explanation is that suggested by Boyd.[14] The subject of tissue-resistance is a very interesting one, accounting as it may for the difference between innocent and malignant tumours, the former scarcely establishing a footing, growing in one soil only, slowly and encapsuled, the latter flourishing freely amid feeble neighbours and able to establish colonies in fresh parts of the body, all tissues of the latter being equally wanting in resistance. But the subject is too long to be discussed here.

We have thus considered the effects produced by the cutting off of nervous influence from the cells of the body and found that such might be seen in both of two possible directions—excess and defect of growth and vigour. The former effect is seen in "trophic" lesions, the latter in the formation of tumours. Whether the one or the other effect is manifested may probably depend on the condition of the cells at the time the controlling influence is withdrawn. In the case of trophic lesions a large portion of the body is affected and there is accompanying it a considerable vaso-motor disturbance. The cells are badly nourished and have little vigour. If a similar vaso-motor disturbance were to occur in a normal part the nervous system by stimulating the cells to increased metabolism might make up for the deficient quantity of the nutriment afforded; without this stimulus they degenerate. On the other hand, the nucleus of a tumour is a small mass of cells of normal vitality cut off from nervous control but lying in a part where the blood-supply is normal and food plentiful. Such cells need the rein rather than the spur, and being unrestrained they grow and form a tumour.

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[13] Campana: loc. cit.

[14] Boyd: Brit. Med. Jour., Nov. 5th, 1887.

HOSPITAL REFORM.[1]

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IN drawing up any scheme for the better administration of medical relief in our hospitals, infirmaries, and dispensaries the necessity of carefully avoiding any measures that would in any way lessen the usefulness of these institutions in relieving cases of urgent illness must be borne in mind. The points to be aimed at are briefly the following: (1) The lessening of the large number of people who now resort to the hospitals when suffering from minor or trivial ailments; (2) the restriction of treatment both in the in- and in the out-patient department to people who are not in a position to pay private practitioners; (3) the abolishment of subscribers' recommendations; (4) the limitation of the number of new cases to be dealt with by each medical officer in the out-patients' department; and (5) the bringing about a more intimate and cordial relationship between the hospital staff and the practitioners resident in the district surrounding each hospital. It will be my endeavour to sketch out schemes which will suit (*a*) the large general hospitals; (*b*) the smaller general hospitals; and (*c*) the special hospitals.

With respect to the first point it cannot be denied that at the present time most hospitals treat a very large number

[1] A paper read at the first annual meeting of the Hospital Reform Association Jan. 19th, 1898.

of people in the casualty department whose illnesses are of a very trivial description. Formerly that department was used for the treatment, as its name implies, of casualties—i.e., cases of accidents and of sudden and acute illness. It has been argued by some prominent hospital managers that it is difficult to define exactly what are trivial and what are not trivial cases, but I am of opinion that in the great majority of instances no such difficulty exists. I believe that a skilled resident medical officer should be appointed at all the large general hospitals to deal with such cases. This idea has been successfully carried out at St. George's Hospital and at St. Thomas's Hospital for some years past, and quite recently St. Mary's Hospital has adopted a similar plan.

With respect to the second point the association has urged the necessity of restricting all out-patients to those bringing a recommendation from a medical man, and although that particular recommendation has not met with much support from members of the medical staffs yet the association is still of opinion that on the whole it is the best, easiest, and simplest way of limiting hospital treatment to those who are in need of it. To meet the objections which have been made to that plan it will be as well to propose some modification of it. In dealing with this question the eligibility of patients from two points of view has to be considered—first, do the patients stand in need of hospital treatment? and, secondly, are they unable to pay for proper treatment outside the hospitals. And again, these patients must be sub-divided into two classes:—(1) those suffering from such ailments as are ordinarily treated by general practitioners and (2) those suffering from special disorders—e.g., ophthalmic, aural, and gynæcological cases—which are not generally treated by general practitioners. To make this more clear I will say that whereas a patient suffering from chronic bronchitis would be ineligible for hospital treatment a patient suffering from cataract would be perfectly eligible.

Now the question arises what should be the *modus operandi?* Should the medical fitness of a patient be decided first, or should the hospital authorities first make inquiries into the financial fitness? I think this is of great importance because it is perfectly manifest that no inquiry that is conducted at the hospital will prove of any real use. To make certain that the patients are fit and proper persons for gratuitous treatment it is absolutely necessary in the majority of instances for the inquiry officer to visit the homes of the patients. As it might happen in some cases that this delay would prove hurtful I think that the best plan to recommend is that the resident physician should first decide the medical fitness of patients and after they have received "first aid" refer them to the inquiry officer for particulars as to their circumstances. I think that the suggestions made by Dr. Turney in the December number of the *St. Thomas's Hospital Gazette* should be adopted—viz., (1) that a notice should be placed in the out-patient rooms to the effect that patients bringing notes from medical men would receive first consideration; and (2) that the medical men residing in the district of the hospital should be furnished with notes by the hospital authorities. In the case of patients coming from a distance I would suggest that it should be made an *absolute rule* that they should bring a note from a medical man. That hospitals are much abused by this particular class is well known, and it is obvious that the services of an inquiry officer could not be utilised in such cases. Many instances have come under my own knowledge where people suffering from some trivial ailment have spent as much money in travelling to a hospital as would furnish a specialist with his ordinary consulting fee. With respect to in-patients except in cases of real urgency I would suggest that the hospital managers should make inquiries before they are admitted. Such a regulation would not apply to patients recommended by medical men. I think that the suggestion of the Charity Organisation Society with regard to cases obviously destitute—viz., that they should be referred to the Poor-law—a good one, and one that would benefit the patients. At the same time I must admit the existence of a class of people whom, although too poor to obtain proper nourishment, it would yet be cruel to pauperise, and for this particular class we think the resources of the Samaritan Society should be available.

With respect to the third point—the abolishment of subscribers' recommendations—I am given to understand that at many of the large general hospitals in the metropolis patients without subscribers' letters have the same facilities for treatment as those supplied with such letters. It will be found, I venture to say, that the hospital funds will not suffer to any appreciable extent if this system of recommendation by subscribers is done away with. There can be no doubt whatever that the system leads to a good deal of abuse and that as long as it remains in operation it will be almost impossible to check that abuse. However stringent the regulations made by hospital authorities for the admission of patients, it will be found that subscribers will certainly fail to coöperate with these authorities in seeing them carried out.

With respect to the fourth point—the limitation of the number of new cases—it may be said that as such a regulation has answered so well at St. George's Hospital and at St. Thomas's Hospital it would answer equally well at other large hospitals. The resident physician would have the selection of cases and naturally would select those which in his opinion stood most in need of immediate treatment. It must not be forgotten that, as a rule, the majority of out-patients suffer from chronic illnesses and therefore do not suffer any ill effect from having their treatment delayed for a few days.

Regarding the last point I think that if the plan I recommended were loyally carried out by hospital managers they would find a disposition on the part of medical men to take a greater interest not only in the medical work but in the financial work of the hospitals. Nothing but good can result from the establishment of a more cordial relationship between the hospital physicians and surgeons and the outside practitioners.

I have not mentioned the subject of a wage-limit for hospital patients because I believe that such a limit is liable to act harshly. At the same time I think that the hospital authorities should come to some agreement amongst themselves on this subject, an agreement which would allow their inquiry officers some discretion in exceptional instances.

It is obvious that the plan I have recommended could not be carried out in its entirety by small provincial hospitals and it is therefore necessary to propose some alternative plan. I have been much impressed with the systems adopted at Oldham, Sunderland, and Dorchester, and I think it deserves the consideration of managers of other country hospitals. In Oldham Infirmary patients have to appear before what is called an admission committee and have to prove to the satisfaction of that committee that they are not in a position to pay for treatment. The work of the committee is made easier by the fact that the benefits of the institution are restricted to inhabitants of the borough. The fact that out of a population of about 130 000 only 4400 availed themselves of the benefits of treatment in the out-patient department in the year 1892 proves to my mind that the system adopted there is one to be commended. And my belief in it is strengthened when I find that the working classes of that town subscribe something like £5000 a year to the funds. In the case of Sunderland Infirmary it appears that the out-patients are limited to the treatment of in-patients who have been discharged but who still require further attention and to cases of accident and of sudden illness. In Sunderland as in Oldham the working classes subscribe large sums towards the support of the institution. In Dorchester, I am informed, the system of examination by an admission committee before treatment is given works well and little abuse exists. Supposing that small provincial hospitals adopted the plan pursued at Oldham and Dorchester I would suggest that the medical officers should have instructions to reject any cases which in their opinion were not in need of hospital treatment. In Sunderland cases which appear unsuitable from a medical point of view are referred to the provident dispensary.

With regard to special hospitals it is plain that another system must be adopted. I have an opinion respecting the need of such a large number of hospitals for special diseases but I am bound to recognise the fact that they exist and that they are, as is proved by our report on them, much abused. The subject teems with difficulties and I feel that it is only by the coöperation of the medical officers attached to these hospitals that we can possibly hope to overcome these difficulties. I would venture to suggest that all patients should be requested before being treated to bring a note from a medical man stating that they required special treatment and were not in a position to pay the specialist's fee for that treatment. The effect of such a regulation would be to diminish the number of people

who now resort to such hospitals and to bring the specialists into closer relation with the general practitioners. It must, I think, be admitted as a fact that a large number of persons resort to special hospitals who could be treated quite as efficiently by general practitioners. At the same time I recognise the fact that in some instances patients who require the aid of specialists are not recommended by their medical attendants to consult them.

Looking at the question from an all-round point of view I feel that it is very desirable to bring the specialists into a closer relationship with the family practitioners; I also feel that there is a large and deserving class of persons who although well able to pay a moderate fee are not well enough off to pay the ordinary consulting fees of specialists. I therefore think that to avoid the abuse of special hospitals on the one hand and on the other hand to make provision for the class I have indicated it would be well if the medical officers attached to special hospitals in the metropolis and in the large provincial towns should take this matter into their consideration and see whether they could not adopt some means whereby people could have the benefit of their advice and treatment on payment of a moderate fee. It should be made a *sine quâ non* that people who wished to take advantage of such a scheme should bring a letter from their own medical man stating that they are not in a position to pay the ordinary consulting fee. I submit that this would be far more advantageous than the present system adopted at most of the special hospitals where fees varying in amount are extracted from patients no portion of which ever reaches the pockets of the medical staff. I maintain that all hospital treatment should be free and should be restricted to those who are not able to pay for such treatment. It is altogether wrong to mix up business with charity, and if hospitals find they are not in a position to treat all the patients who resort to them the managers should take steps to reduce the number of patients. The idea of charging small sums for medicines or appliances is altogether repugnant to the name of charity; it is moreover unfair to the main body of the profession and leads many members of it to adopt plans for procuring patients which scarcely tend to enhance the dignity of their calling.

To sum up, I recommend, first, that in the casualty department of our large general hospitals only cases of urgent importance should be attended to. Secondly, that in the out-patient department patients bringing notes from medical men should have a prior claim to treatment; that a resident physician should be appointed whose duty it shall be to see all out-patients in the first instance, to select those who require immediate treatment, and to decide which cases do not require hospital treatment; that after patients have received "first aid" their circumstances shall be inquired into by a competent officer; and that the honorary medical officer shall not be required to treat more than twenty new cases at one sitting. Thirdly, that all in-patients, with the exception of cases of accident or of great emergency, should be recommended for treatment by medical men and that before being admitted their fitness and circumstances should be inquired into by an officer specially retained for that purpose.

Cardiff.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next general meeting of the association will be held by the courtesy of Dr. W. S. Kay at the West Riding Asylum, Wadsley, near Sheffield, on Wednesday, Feb. 16th, at 4 P.M., under the presidency of Dr. T. W. McDowall. There are several candidates for election and papers and notes will be read by Dr. Crochley Clapham on the Comparative Intellectual Value of the Anterior and Posterior Cerebral Lobe; by Dr. W. C. Sullivan on Alcoholism and Suicide; by Dr. A. Keith Campbell on a Case of Hæmatoporphyrinuria; and by Dr Bedford Pierce on an Unusual Case of Poisoning. Dr. Kay has invited the members of the association to lunch at 1 P.M. punctually at the asylum and will subsequently afford facilities for its inspection. The members will dine together after the meeting at 7 P.M. Intending visitors are asked to write as soon as possible to Dr. Kay, Wadsley Asylum, Sheffield, stating whether they are able to accept his invitation to lunch and whether they will dine with the association. The price of the dinner will be 7*s.* 6*d*, exclusive of wine.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON FOREIGN BODIES EMBEDDED IN THE CONJUNCTIVA.

BY CHARLES BELL TAYLOR, M.D., F.R.C.S. EDIN.,
SURGEON TO THE NOTTINGHAM AND MIDLAND EYE INFIRMARY.

A MAN, aged forty-six years, remarkably healthy-looking and powerful, engaged in agricultural pursuits, applied to me on Dec. 20th, 1897, complaining of inflammation of the left eye which had persisted for two months in spite of careful treatment by a well-known and accomplished surgeon. The eye was inflamed and there was muco-purulent discharge which welled over on to his cheek, while the cornea was becoming hazy. I had seen similar cases and at once concluded that he had a foreign body embedded in the conjunctiva; he said he had no recollection of any such accident and although I carefully everted his lids there was no evidence of any extraneous substance; he was very sensitive and resistant and I therefore placed him on the operating table and while he was under the influence of an anæsthetic succeeded with my finger in dislodging an ear of corn which is reproduced in exact size in the accompanying illustration. All the symptoms subsided at once, the discharge ceased, the cornea cleared, and he resumed his occupation.

Foreign body concealed in sac of conjunctiva for eight weeks

It is astonishing how apt we are to overlook intruding substances in this situation and how difficult it is to remove them. I have known spicula of corn and rye overlooked for months although the patient has been repeatedly examined by experienced practitioners; they are best removed by the operator's finger inserted into the cul-de-sac.

Nottingham.

NOTE ON A CASE OF PUERPERAL SEPTICÆMIA TREATED WITH ANTI STREPTOCOCCIC SERUM.

BY NOLAN DALY, M.R.C.S. ENG., L.R.C.P. LOND.

ON Dec. 6th, 1897, I was called to a woman who had been delivered by a midwife. There was considerable metrorrhagia and I was sent for. The placenta was firmly adherent and had to be picked away from the uterine wall with the fingers. The patient was very pale and her pulse was feeble. On the 7th she was apparently doing well, but next day she had a rigor with free sweating and throbbing headache; the feet and hands were cold, the temperature was 104·5° F., and she was extremely ill and delirious all night, her pulse being 150 and running. The lochia were absent. The uterus was washed out with perchloride of mercury and six grains of quinine were given twice during the day. On the 10th the patient's condition was much the same, the temperature being 103° and the pulse 136. The abdomen was markedly tympanitic and rigors were frequent, the headache if possible being worse, so I decided to inject 10 c.c. of Messrs. Burroughs and Wellcome's anti-streptococcic serum, which I did at 12 P.M., injecting it under the skin of the abdomen. At 3.30 P.M. I again saw the patient. The temperature was 102·1° and the pulse was 136. She said that she felt a little better and that she had had some sleep. On the 11th, at 12 P.M., her condition was very much improved, the temperature being 99·8° and the pulse 108. The lochial flow had again commenced, the tympanites had disappeared, and the headache had almost gone. On the 12th the patient's temperature had risen to 100·8°, the pulse being 108. I injected 10 c.c. of the serum into the opposite side of the abdomen. On the 13th the temperature had again fallen to 99°, the pulse was 102, and she said she did not feel ill. On the 14th the temperature was 101·2° and the pulse was 102. I again injected 10 c.c. of the serum. From this date the patient made an uninterrupted recovery, the temperature falling to normal and not again rising. No unpleasant local effects followed the injections, but she complained of numbness in the right arm and leg after the first injection; this lasted about six hours and did not recur after the other injections.

Kingston, Abingdon, Berks.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

WESTMINSTER HOSPITAL.

A CASE OF EXPLORATION OF THE BRAIN FOR SUSPECTED ABSCESS OF OTITIC ORIGIN; NEGATIVE RESULT; RECOVERY.—SECOND OPERATION ONE YEAR LATER; EVACUATION OF EXTRA-DURAL ABSCESS AT GENU OF SIGMOID SINUS; RECOVERY.

(Under the care of Mr. PHILIP R. W. DE SANTI.)

A WOMAN, aged twenty-one years, was, on Feb. 7th, 1896, admitted into the Hollond Ward under the care of Mr. Philip de Santi. At six years of age she had measles; when about seven and a half years of age a discharge was noticed from both ears; it came gradually and without pain. The discharge was more profuse on the right side. From this period up to the time of her admission to hospital she had suffered from purulent discharge more or less continuously from both ears. She attended for some six years at the aural department at Westminster Hospital under the care of Mr. de Santi's predecessor, Mr. Black. In 1891 Mr. Black removed some post-nasal growths and enlarged tonsils. In November, 1894, in consequence of persistent mastoid pain Mr. Black explored both mastoids by Wilde's incision. For a time there was an improvement with regard to the pain, but the discharge from both ears remained profuse. In July, 1895, she was subject to frequent attacks of mastoid pain especially on the right side and the discharge from the ear was profuse and fœtid. Mr. de Santi saw the patient for the first time on Feb. 6th, 1896, when her condition was as follows. Up to two weeks previously she had been in service as a housemaid. She had, however, to give up her work on account of persistent giddiness with a tendency to fall; she also became apathetic, stupid and drowsy. She had persistent headache and from the time she left service she had been steadily getting worse. On admission on Feb. 7th the patient was in a very drowsy condition and lay on her right side supporting the right side of the head with her hand. She had occasional sharp attacks of pain in the right mastoid and parietal regions which made her scream out. There was severe pain on percussion and pressure over the right mastoid and parietal bones. No redness or œdema over the right mastoid was observed and there was no swelling or tenderness in the course of the internal jugular vein. Her temperature was 99·4° F. The pulse was regular and 70. Nausea but not actual vomiting was present. The bowels were obstinately constipated and the tongue was furred. There was no paralysis or paresis, loss of memory, aphasia, or slowness of speech. The patient, however, seemed to be extremely dull and unable to understand questions, and she took no interest whatever in her surroundings. Taste and smell were unaffected. Sensation was not affected and the reflexes were normal. There were no tremors. The optic discs were normal. There was very severe giddiness with tendency to fall to one side, sometimes to the right and at others to the left. She had become considerably emaciated within the previous two weeks. There was profuse fœtid discharge from the right ear and behind both ears there were scars of former operations. The whole of the membrana tympani and ossicles of the right side had been destroyed. No carious bone or fistulous openings could be detected with a probe. The ticking of a watch was heard only on contact. The patient was well purged and kept carefully under observation. The pain, however, especially over the mastoid, continued, the giddiness (when tested for) and drowsiness increased, the pulse became somewhat slower (65), and the sense of vomiting remained. It was therefore on consultation determined to explore for pus.

The head having been shaved, cleansed, and rendered aseptic and the external auditory meatus washed out and plugged on each side with salicylic wool Mr. de Santi on Feb. 14th made an incision just behind the right ear from the top to the bottom of the mastoid process. Having raised the periosteum on either side of the incision he proceeded to open the mastoid antrum with trephine and gouge. The spot chosen was Macewen's supra-meatal triangle. The bone was extremely sclerosed; on removal of the outer wall of the mastoid antrum no pus was found: the mastoid cells were non-existent. No carious bone or fistulous track could be seen in the mastoid antrum or attic. Another trephine opening of about one inch in diameter was now made one inch behind and above the centre of the external auditory meatus exposing the dura mater over the temporo-sphenoidal lobe. There was no thickening or bulging observed. The lobe was explored with a trocar and canula in various directions to a depth of one and a quarter inches. No pus was reached. A third opening was now made directly over the meatus and the tegmen tympani et antri and the dura mater covering it were explored. No extradural abscess, thickening, or fistula of the dura was found. The skin flaps were now closed and a small drain was left in the lower angle and the parts were dressed with dry antiseptic wool. The operation lasted one hour and forty minutes. On the 17th the wounds were dressed; they looked very well. The temperature was normal, but the pain was still very bad indeed. On the 18th the pain still persisted and there was marked pain in the occipital region; well-marked giddiness was present. Mentally the patient appeared to be better. It was decided to explore the cerebellum. Mr. de Santi therefore turned down a flap with the base over the superior curved line of the occipital bone, raised the periosteum, and exposed the inferior curved line. Directly below this line he trephined, exposed the dura mater, and explored the cerebellum to a depth of one and a half inches. Both the anterior and outer and the anterior and inner parts of the cerebellum were carefully explored as well as the deeper parts; no pus was found. The scalp flap was sutured with horsehair. The original wound was slightly opened up and the temporo-sphenoidal lobe was again explored, but with a negative result. On the 19th the patient felt better and had had a good night; the pain was less. On the 24th all drowsiness and giddiness had disappeared. There was no pain in the mastoid or head and the wounds had healed by first intention. She took an active interest in all that was going on in the ward and was bright and cheerful. The temperature had never been above 100·4° since the operations; the pulse was 75 and regular. On March 4th she was sent to a convalescent home.

Subsequently to her discharge from the hospital the patient was frequently seen by Mr. de Santi and she remained quite well with the exception of deafness and a small amount of discharge from the right ear, which was gradually getting less, until about the third week of December, when she began to complain of pain over the right parietal region. This pain seemed to be constant and at times was very acute. She winced considerably on percussion of both right parietal and mastoid regions. The pain continued and she again began to suffer from giddiness, vomiting, stupor and drowsiness; discharge, which was slight in amount and fœtid only as regarded the right ear, was present. She was readmitted under the care of Mr. de Santi on Feb. 22nd, 1897.

Just previously to readmission a swelling had formed in the line of the old post-auricular scar of the right side; eventually some slight quantity of pus came away from this swelling; a probe entered the sinus left for about half an inch. The sinus led to the neighbourhood of the trephine aperture made one year before for the temporo-sphenoidal abscess. The patient's general condition was as follows: she lay curled up on her right side and was almost always in a very drowsy state. She had occasional vomiting, which was irrespective of the ingestion of food. Her facial aspect was that of general apathy except when she had a sharp attack of pain in the right parietal and occipital regions, when her expression became that of lively pain. She usually kept her hand up to her head on the affected side. She had no inclination to eat. Her tongue was furred. The temperature was 99° and the bowels were slightly constipated. There was no paralysis or disturbance of sensory functions. The eyes were normal. There was a fœtid discharge from the right ear; the membrane was gone, but no rough bone was to be discovered with the probe. A non-fœtid discharge from the left ear was present. When she

was thoroughly roused the patient answered questions rationally, but took a long while to reply. The pulse was 65 and soft and the respirations were 18 and regular. Her condition gradually becoming worse and the stupor tending towards semi-unconsciousness Mr. de Santi determined to explore the sinus.

On Feb. 26th the patient having been prepared in the usual way and given a hypodermic injection of morphia one hour before the operation Mr. de Santi proceeded to slit up the old wound and to explore the sinus therein. Having got down to the bone the periosteum was turned back on either side and the parts were well exposed; the sinus was then seen to extend through the substance of the temporal bone about midway between the two old trephine apertures made one year before for exploration of the temporo-sphenoidal lobe and cerebellum. A trephine (one inch in diameter) was applied over the sinus and the area of bone was removed. At one part the dura mater was found to be very adherent and much thickened. On following up the sinus pus was found between the dura mater and the posterior aspect of the petrous bone and in the bone itself. The pus was very fœtid and amounted to about 9½ drachms in quantity. The dura mater was much thickened and the lateral sinus was found to be partly separated from the bone, its walls being much thickened and covered with granulation tissue. The sinus, however, was patent; on examining the posterior aspect of the petrous portion of the temporal bone carious erosion was found close to the genu of the sigmoid sinus; fœtid pus exuded from the diseased bone. Having evacuated the pus Mr. de Santi carefully scraped the diseased bone area and enlarged the opening until he got a free through communication into the middle ear and out of the external auditory meatus. The parts were then gently syringed out with a 1 in 60 carbolic solution and dried. A plug of iodoform gauze dusted with iodoform was introduced so that it ran from the trephine aperture behind, through the middle ear forward, and out at the external auditory meatus. The whole of the operation area was dressed with double cyanide gauze. On the 27th the patient felt fairly well and was much brighter; the temperature was 100°. There was pain in the frontal region of the head. On March 1st she was doing very well; she still had frontal headache but otherwise she was in every respect much better. On the 2nd the temperature was normal; the wound was dressed, looking very well. The bowels were well opened. On the 24th she suffered from right facial palsy; this was not present until the 23rd. The wound was still kept patent with a plug and dressed daily. She was quite well in all respects except as regarded the paralysis of the right facial nerve which was complete. She was discharged on May 6th with the wound quite healed and the discharge from the ear stopped. Her temperature never rose at any time above 100° and the relief to all her symptoms after operation was marked. The supervention of the right facial paralysis was regrettable.

Since May Mr. de Santi has seen the patient regularly and she has remained quite well and free from headache, giddiness, or aural discharge; for some little time she had the galvanic battery applied for the facial paralysis but it did not seem to improve at all. Now, however (January, 1898), the paralysis has improved so considerably as to be hardly visible. Her hearing has also much improved, for she is able to hear the ticking of a watch at 5 in. on the right side and 4½ in. on the left side.

Remarks by Mr. DE SANTI.—The above case seems to me to be of considerable interest from many points of view. The patient had been suffering for some fourteen years from more or less continuous purulent discharge from both ears. She had previously to my first operation been under skilled treatment for six years, during which time she had had adenoids and enlarged tonsils removed and both mastoid antra explored. Notwithstanding the constant treatment she had received the purulent discharge continued, and finally there were symptoms which pointed so strongly to involvement of the brain that an extensive exploratory operation was deemed necessary. This exploration proved quite negative as regards intracranial complications and yet the patient derived immediate benefit therefrom, the relief obtained lasting for some ten months. Her old symptoms then recurred and at first I considered them to be of a probably imaginary character; they became, however, so well marked that I felt strongly there must be some intracranial complication present. The formation of a collection of pus in the site of one of the old scars and the supervention of a sinus leading to bone finally determined me to again thoroughly explore. This I did one year after the first operation with the result that a well-defined, though small, thick-walled abscess was found in the posterior fossa of the skull, between the groove for the lateral sinus and the posterior aspect of the petrous portion of the temporal bone. The fact of the sinus not being thrombosed is noteworthy; it could only have been a matter of time before this occurred and the prognosis would have been rendered all the more grave had lateral sinus thrombosis been present. Moreover, the case is most instructive if only as an illustration of the great difficulties often presented in forming a diagnosis of and localising the seat of intracranial complications of otitic origin. The diagnostic features leading me to explore in February, 1896, were the sudden and definite onset and progressive course of the disease occurring in a patient the subject of chronic fœtid otitis media purulenta. The trouble was ushered in by persistent giddiness, with a tendency to fall and severe localised headache sufficient at times to make the patient scream out. There was severe pain on percussion and pressure over the right mastoid and parietal bones, as well as from the application of heat, and extremely well-marked and increasing drowsiness and stupidity. (Normally the patient was of a cheerful and active disposition.) In conjunction with these symptoms there were obstinate constipation and nausea independent of the ingestion of food and the temperature was slightly raised. There was nothing in this train of symptoms which could be taken as diagnostic of the localisation of the mischief. All that could be surmised was that from the persistent right-sided pain and tenderness and the extremely fœtid right aural discharge the disease would be found on the right side. Exploration of the mastoid, tegmen tympani and temporo-sphenoidal lobe having proved negative and the symptoms persisting, especially giddiness and pain in the occipital region with a tendency to retraction of the neck, it was thought only right to go one step further and explore the cerebellum. The exploration was very thorough, yet no pus or abnormal intracranial conditions were found and the patient subsequently lost all her symptoms, though ten months later they recurred. As I have already said the formation of an abscess in one of the old scars together with increasing drowsiness determined me to operate again in February, 1897, with the result already narrated.

In a paper I wrote for the Westminster Hospital Reports, 1897, on the Operative Treatment of Cerebral and Cerebellar Abscesses of Otitic Origin, I have laid stress on the importance of a consideration of the anatomical conditions that may be met with, the most advantageous spot for trephining, and the boundaries of the brain area operated on and the depth to which it is safe to penetrate. I have also pointed out that as the great majority of cerebral abscesses of otitic origin are located in the temporo-sphenoidal lobes, the pus being usually found in that part corresponding or close to the tegmen tympani et antri, the trephine should be applied over the bone corresponding to this area; when the brain is exposed it is advisable not to penetrate the brain to a greater depth than 1½ in. In my opinion the operation should be carried out as follows. If symptoms of abscess, whether cerebral or cerebellar, be present the preliminary step should be an exploration of the mastoid antrum. In many cases the abscess has been reached from the cavities of the middle ear, in others all symptoms have ceased after opening the mastoid antrum. The tegmen tympani et antri can also be explored by opening up the cavities of the middle-ear together with the bony partition between them and the dura mater as well as the bony partition at the sigmoid sulcus. By this preliminary step pus, granulation tissue, and carious débris can if present be removed from the antrum and attic. Should the brain symptoms persist after this step, and point strongly to temporo-sphenoidal abscess, a large trephine hole should be made with its centre perpendicularly over the bony meatus; the disc of bone being removed the upper part of the bony external meatus and roof of the mastoid are chiseled off to the depth of three-fifths of an inch, the dura mater is raised, and the tegmen tympani et antri is exposed. The parts should now be well dried and a good light thrown into the wound. The condition of the bone, whether carious, and of the dura mater, which may be found inflamed, adherent, or fistulous, can now easily be ascertained and any extra-dural abscess present evacuated. If the dura mater be adherent or fistulous the fistula should be followed up, widened, and the abscess exposed and drained; any diseased bone present must be carefully removed

if possible. Should the exploration so far give no indications of the proximity of the abscess the lobe must be explored in various directions with a trocar and canula of sufficient size. I advise the use of an instrument with the inches and fractions of inches delineated on it, so that accurate measurements of the actual depth of brain penetrated can be estimated. The abscess having been found the dura mater is carefully incised and the abscess cavity gently irrigated with carbolic lotion (1 in 100) at 100° F. If the abscess be small two decalcified chicken bone drainage tubes are inserted (if large a silver tube is preferable) and the skin flaps are closed, an aperture being left for the tubes. The whole is then dusted with iodoform, dressed with double cyanide gauze wrung out of a 1 in 40 carbolic solution, and covered with a thick layer of double cyanide wool. If, on the other hand, after the opening up and exploration of the mastoid the symptoms point very decisively to cerebellar abscess the bone is best trephined at a point one and a half inches behind and a quarter of an inch below the centre of the external auditory meatus. After the dura mater is exposed and opened the exploring trocar and canula should be passed forwards, upwards, and inwards. An abscess in the anterior and outer part of the lobe is thus reached and this is the most usual situation for a cerebellar abscess as it is the part nearest to the bone disease—i.e., the inner side of the mastoid or posterior surface of the petrous bone. If the abscess be in the anterior and inner part it may be necessary to penetrate to a depth of two inches. When found the abscess is to be dealt with in a similar manner to a cerebral abscess. I furthermore advise exploring by enlarging the trephine hole with Hoffman's cutting forceps, the sigmoid sulcus up to the jugular fossa and the posterior surface of the petrous bone up to the internal auditory meatus, for in my opinion it is hardly sound surgery to merely open up any abscess found leaving the bone disease which has given rise to it untouched. If possible any diseased bone should be eradicated. One other point: I always wash my exploring needle-syringe in boracic solution just previously to puncture, as carbolic solutions when mixed with a little blood and brain matter produce a fluid very much like pus and this gives rise to false hopes.

AYR COUNTY HOSPITAL.

A CASE OF SERIOUS INJURY TO THE HEAD; OPERATION; RECOVERY.

(Under the care of Mr. W. J. NAISMITH.)

THERE are several points of interest in the following account of injury to the head. In the first place it is remarkable that so extensive a depression of bone was not accompanied by any complete unconsciousness, though the depression must have disturbed to some extent the intracranial pressure, but that the disturbance was probably not very great was shown by the equality of the pupils. A second point worth notice is the alteration of the temper; this is by no means rare after injury to the head and unfortunately the change is always in the direction of deterioration, a good-tempered man becoming bad-tempered—at least, we are not aware of any case in which moral improvement occurred as a result of an injury to the head. The complete recovery which followed so very extensive a compound depressed fracture of the skull is an eloquent testimony to the progress which has within recent years been made in the treatment of these severe injuries. Lastly, the manœuvre adopted by Mr. Naismith of only partially trephining the bone in order by bending to set free a piece of depressed bone is well worthy of imitation in suitable cases.

A private in the 1st Argyll and Sutherland Highlanders, a recruit, eighteen years of age, of two months' service, who had been sent with his company from Glasgow to the rifle range at Irvine for musketry practice, was, on May 17th, 1897, transferred to Mr. W. J. Naismith's care in Ayr County Hospital by Dr. Wilson, of Irvine, in medical charge of the detachment. The patient was suffering from compound fracture of the skull. On this day, after the men's dinners, one of his comrades was amusing himself by throwing the hammer, which in this instance consisted of a 16-pound shot with a three-foot rope attached to it for a handle. It slipped from the hands while being swung preparatory to being thrown and, flying off at an angle, landed with crushing effect on the patient's head, who was lying on the grass several yards off reading. He was taken to Ayr in an ambulance and had vomited repeatedly by the way. On examination about five hours after the accident the general condition was that of shock; the pulse was 92 and weak and the respirations were 24 and shallow. The pupils were equal and dilated, with sluggishness of the conjunctival and pupil reflexes. There was neither nasal nor aural discharge and no paralytic or localising symptoms whatever were present. The patient was only partially conscious, repeated questioning eliciting with difficulty but a monosyllabic reply. He could not open his eyes, but he could partially protrude the tongue which showed no deflection. There was intermittent moaning with deep sighing and restlessness of the head. It may be stated that at no time, even at his worst, did he become totally unconscious, but he could always be partially roused. Locally, there was on the right frontal region of the head a longitudinal wound two and a half inches long and crescentic in shape with the convexity outwards. Blood freely oozed from its irregular ragged edges on removal of the dressings. This led down to an extensive depressed fracture half an inch deep at its central part necessitating an operation which was proceeded with under chloroform with the assistance of Dr. Muir, of Ayr. Utilising the scalp wound and considerably extending it two large flaps were raised revealing the area of fracture, which was of eggshell character, the several fragments being jammed down and immoveable. Oval in shape, with a long axis of two and three-quarter inches antero-posteriorly, it involved the half of the right frontal bone to near its superciliary ridge, crossed the intervening coronal suture, and included about three-quarters of an inch of the contiguous right parietal bone, measuring rather more than two inches transversely across the central and widest part of the depressed oval. In addition there was a single deep fissure of fracture from which blood was oozing, this fracture extending from the posterior part of the depressed margin obliquely back across the parietal bone towards the lambdoidal suture for at least three and a half inches.

The trephine was applied to the inner or mesial side of this fissure, to that portion of the parietal bone just clear of the depressed margin. The included disc was not entirely sawn through as for removal but only partially, sufficiently so as to enable Mr. Naismith, by bending it, to free the edge of the nearest depressed fragment and to introduce the elevator for prising it up. This use of the trephine may be worthy of note. The other pieces of bone were then easily removed in succession; they were altogether eight in number, more or less irregular in shape, the largest one being of about the size of a florin, and the others being as large as a sixpenny-piece. The dura mater was incised and egress was given to a quantity of blood and a few small clots which revealed a longitudinal laceration an inch in length of the brain surface itself. It will thus be seen that a considerable hole was necessarily left in the skull, the cerebral area deprived of its osseous covering consisting of the first, second, third, and ascending frontal convolutions. The bony margins were trimmed with bone forceps; a good-sized drainage-tube was inserted and the scalp wound was brought together with fish-gut sutures. A light dressing of protective, double cyanide gauze and corrosive wool was applied, and an ice-bag was superimposed after the patient was removed from the table. A brisk laxative and fluid nourishment in small quantities were ordered. On the next day (May 18th) the temperature rose to 101° F. with corresponding rise of pulse. The bowels acted freely after a castor-oil and turpentine enema. The patient was very restless, constantly endeavouring to tear off his dressings. On the 20th the left side was paralysed, the tongue being deflected on protrusion, but the right arm and leg were in almost constant automatic motion. He had three epileptic seizures, passing urine and fæces in the bed involuntarily, but he took nourishment fairly well. The wound was dressed regularly every eight hours. Though his left side was powerless, yet the constant efforts to roll out of bed and to remove his dressings with his right hand forced Mr. Naismith to apply to the officer commanding at Irvine for a man to watch the patient at night, a request most courteously granted. On the 23rd the temperature reached the normal, but restlessness and left hemiplegia continued, though a marked improvement in consciousness was noticed along with the articulation of a few words addressed to his nurse. No more fits occurred. From May 26th to June 4th the temperature remained at 97°, this subnormal condition ensuing on the evening of May 25th. During these ten days

marked improvement of all the symptoms was apparent, the left side began to regain power, involuntary micturition and defæcation gradually ceased, and the complete faculty of speech was regained, but his moral attitude assumed suddenly a strange obliquity, a not unusual phenomenon in cases of injury to the head. From being, according to information received, invariably a respectful, well-spoken lad he developed the use of the most foul and profane language, became insolent in demeanour and filthy in bed—a state of matters, however, which proved merely temporary, lasting only for about a week, after which he regained his usual quiet, pleasant manner. On June 5th the temperature was normal and remained so, convalescence being well established. The scalp wound, necessarily an extensive one, healed satisfactorily, leaving for a short time a small hernia cerebri of the size of a shilling at the site of the drainage tube. This, however, eventually disappeared and examination now shows a large firmly united tri-radiate scar over a depressed, slightly pulsating area corresponding to the skull surface removed. The recovery was in other respects quite satisfactory, but in spite of the natural diminution to some extent of the skull opening in process of time Mr. Naismith fears that an invaliding board alone intervenes between the patient and his return to civil life. He returned to Maryhill on July 17th.

Remarks by Mr. NAISMITH.—The above record is made with the approval of the principal medical officer, Scottish district, who was good enough to express much interest in the case. I desire to express my indebtedness to Surgeon-Lieutenant-Colonel Coats, A.M.S., in medical charge of the 21st Regimental District, who saw the patient with me, and to Dr. Landsborough for notes of the case.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Immunity and Latency after Operations for Reputed Carcinoma of the Breast.

A MEETING of this society was held on Jan. 25th, the President, Dr. HOWSHIP DICKINSON, being in the chair.

Mr. MARMADUKE SHEILD read a paper on Immunity and Latency after Operations for Reputed Cancer of the Breast. The paper commenced with a short sketch of the general results of the old or incomplete operation for cancer of the breast in this country during the present century. Attention was drawn to the fact that the more extensive operation as now advised was promulgated by Moore, of the Middlesex Hospital, as long ago as 1867. Almost every surgeon of experience was able to quote notable exceptions to the generally received rule that rapid recurrence was invariable. An investigation into the subject led to the belief that the results even of the old or incomplete operation were not as universally bad as generally stated. A number of cases were collated from various sources to show this. A much larger number could have been quoted, but the cases were collected rather with the view of illustrating the subject and of evoking comment and discussion than for the sake of compiling a very large number. The source of information was quoted in the tables, and the reasons for believing the cases to be genuine were carefully stated, especial stress being laid upon the opinions of well-known surgeons. In the first group forty-four cases were recorded where long immunity resulted after operation with no recurrence. In the second group were sixty-four cases where recurrences local and metastatic took place, although the patients lived for long periods. Here it was notable that some of the cases where life has been longest preserved have been those marked by local recurrences which have been removed one or more times. In some of the cases return of the disease took place at remarkably long periods after operation. Some of the best results obtained must be rather due to some peculiarity in the growth or the individual than the actual nature of the operation. The late recurrences observed make no doubt that the adoption of the rule of Volkmann of a three years' limit is too absolute and the period of time too short for the pronouncement of "cure." A collective investigation of the true results of the modern extensive operations is much to be desired.

Mr. PRIDGIN TEALE said that he based his opinions on complete records which he had kept of the cases operated on during thirty years. It was only in private practice that the cases could be efficiently followed up. In eighteen cases which he had followed up there had been no recurrence in ten years. He protested against the doctrine that a case could be regarded as "cured" if no recurrence was seen in three years, but he was surprised to find what a proportion of his cases had lived for a considerable time. None of his cases were "complete" operations. The whole breast was always removed and any glands that were diseased, but it was only in the last half of the series that he had systematically removed the glands, many of which, he remarked, although found to be enlarged when the axilla was opened were not palpable through the skin. If, as was now taught, the complete clearing out of the axilla was so essential he thought that he would have had recurrence more frequently than he did. If the old operation was thoroughly done the results were satisfactory, but experience with Halsted's operation seemed to show that metastatic deposits were frequent and of early occurrence. But owing to antiseptics and other advantages the more extensive operation could be performed with much less risk than would have been possible twenty years ago. He asked whether there was much disability as regards the arm after the removal of the pectoral muscle?

Mr. BRYANT said the paper brought together a collection of exceptional cases from the experience of many surgeons and would certainly enable surgeons to place a more favourable prognosis before their patients. Owing to the exceptional nature of the cases too absolute conclusions must not be drawn. He had looked up his own records and he found that he had full notes of seventy-two cases which he had followed to the end. Of these 55 per cent. died within three years of the operation, 44 per cent. lived for three years and over, 18 per cent. in the latter group surviving for periods of from five to ten years and upwards. With respect to the method of operation he rather took exception to the use of the term "incomplete" as implying that the surgeon had not done his work thoroughly. He usually performed what would be called the incomplete operation, as he did not habitually clear out the axilla or remove the pectoral fascia unless there was sign of disease, and he thought that his results were as good as those by the "complete" method. He always opened and explored the axilla, but did not clear it out unless there was definite disease. It was notable that recurrence rarely took place in the axilla, but below it or in the scar. He thought that the mortality would be high if Halsted's operation were performed on patients who were advanced in life. It must be remembered that cancer was not always a progressive disease, and he referred to several striking instances of carcinoma fibrosum which he had seen, which remained as a local disease for fifteen or twenty years but which appeared to recur rapidly in a disseminated form if removed. He mentioned the case of a lady, sixty-four years of age, who had a carcinoma fibrosum of one breast of many years' standing and then developed a large sarcoma of the other breast. This was removed and recurrent secondary growths were removed eighteen times in the next five years till death occurred from growth in the lung, the carcinoma remaining absolutely quiescent the whole time. In cases of recurrent carcinoma he had noticed many cutaneous tubercles which he had formerly thought to be disseminated new growth, but in one case, of which he made drawings at the time, the tubercles, which had persisted for six months, disappeared without any treatment. He had seen this disappearance in eight or ten instances, which showed that their presence need not deter the surgeon from removing any recurrence in their neighbourhood.

Mr. CHRISTOPHER HEATH endorsed the protest which had been made against considering cases in which no recurrence had been manifested for three years as being cured. Patients of his own operated on in 1886, 1891, and 1893 (three cases) were now well, but there was another patient operated on in 1887 who was well at the end of three years but was dead from mediastinal cancer at the end of five years. Writing in THE LANCET in 1871[1] he had advised the free removal of all infiltrated tissue and of some depth of the pectoral muscle, and this had been his method ever since,

[1] A Course of Lectures on Diseases of the Breast, THE LANCET, May 6th and June 17th and 24th, 1871.

and he preferred it to Halsted's unnecessarily severe operation. He knew of no other remedy except removal. He had never seen any result from the administration of drugs such as Chian turpentine nor had he seen arrest from the application of electrical currents. He reminded the society that it was by no means difficult to trace a patient and to inspect the death certificate by going to Somerset House.

Mr. BARWELL said that cases could not be considered as cured in three years. It was true that he had seen two patients the subjects of undoubted cancer who were well twenty years after the operation, and another who was well fifteen years after operation, while six remained well for ten years and then died from some other disease. But he quoted other cases which illustrated that recurrence might occur at longer periods than three years; in one case it occurred in seven years and in another in sixteen years after operation. He thought that it was advisable in all cases to open the axillary fascia and explore the contents of the axilla digitally for glands or hardened lymphatic cords. He remarked that glandular infection appeared much less apt to occur when the disease was on the sternal side of the mamma. It was necessary to remove freely any skin that was implicated, but no healthy skin which could be preserved should be cut away, as the edges could not then be brought together without tension. This hindered rapid healing and recurrence was much less apt to occur in the scar when healing was prompt. If a gap was left he preferred to resort to transplantation of skin.

Mr. BUTLIN said that Mr. Sheild's paper clearly showed that even with the old methods of operating the results were not so unfavourable and he was rather surprised at the pessimistic tone of previous speakers. Lately he had employed Halsted's method and he thought that it would reduce still further the number of recurrences. He only removed the pectoral portion of the pectoralis major, leaving the clavicular attachment, and the mobility of the arm was very satisfactory. He thought the mobility of the arm depended much more on the amount of the integument removed than on extent of removal of muscle. He did not think that Volkmann's dictum that cancer was to be considered as cured if there were no recurrence after three years was very inaccurate if considered as an average expression for all forms of cancer, but probably the time ought to be extended in the case of cancer of the breast. Of course any patient might suffer from cancer at a later period, but there were many forms of illness in which there was a tendency to the occurrence of subsequent attacks and yet everyone spoke of a patient's recovery from the first attack as a "cure." If a very gloomy view of the prognosis of cancer were generally taken he thought that it would be an evil, as the patients would be even more dilatory in seeking surgical assistance and there might be some tendency for the surgeon to be less thorough in operating, and he thought that a more optimistic view was justifiable at the present time than had been the case in the past.

On the motion of Sir THOMAS SMITH the discussion on the paper was adjourned till the next meeting on Feb. 8th.

MEDICAL SOCIETY OF LONDON.

Rectal Surgery.

A MEETING of this society was held on Jan. 24th, Mr. PEARCE GOULD, Vice-President, being in the chair.

Mr. BRYANT read a paper on Rectal Surgery, illustrated by drawings made by the late Mr. P. Y. Gowlland. The paper appears in full at p. 285 of our present issue.

Mr. ALFRED COOPER agreed with Mr. Bryant as to the importance of making sure of the track of a fistula. It was at present generally recognised that there was usually only one opening into the bowel even when there were several external sinuses. In the old days it was the custom to push a director into the bowel from any sinus and slit up the track, but if this were done through several sinuses there was much risk of fæcal incontinence. The single opening should be searched for and the track laid open. With regard to hæmorrhoids, although he had tried other methods, such as Whitehead's, he had always come back to the ligature which he had employed for thirty years, ligaturing the vessels only without including the mucous membrane. An operation was certainly necessary when the piles remained persistently down or could only be kept in position by plugs. It had often been held that the bleeding from hæmorrhoids relieved headaches, &c., and he had seen such symptoms aggravated after operation. A similar result was sometimes observed in cases of pulmonary phthisis when a fistula was operated on. Passing on to the subject of fissure Mr. Cooper mentioned that there were many cases in which there was a tag inside as well as outside, and if this were not removed the patient's subsequent condition might be often more painful than before the operation, and when the condition inside the sphincter was really bad he preferred to divide the external sphincter as a whole. He wished to insist on the necessity of making a systematic examination in all cases of rectal trouble instead of prescribing gall ointment and confection of senna off-hand, as was often done. He mentioned the case of a man who had been under the care of several medical men who had treated him in this way for supposed fissure, but on digital examination the trouble was found to be due to the rib of a hare which was impacted in the rectum.

Mr. GOODSALL was rejoiced to find that these admirable drawings of Mr. Gowlland had been given to the profession. He agreed with what had been said as to the importance of thorough examination. He preferred to have the patient on the right side and to examine with the left hand so as to leave the right hand free for any manipulation that might be necessary. Ninety per cent of the lesions of the anus and rectum were situated within two inches of the anal margin and might be missed if the finger were introduced too far. When an ischio-rectal abscess had formed an early T-shaped incision gave the patient the best chance of recovering without the formation of a fistula. There was usually very little bleeding. A guide to the position of the internal opening was to draw a line through the anus between the tuberosities. Any external opening posterior to that line would probably correspond to an internal opening in the middle line posteriorly, while an opening anterior to the transverse line would be found in the anterior rectal wall. He thought that hæmorrhoids were usually set up by constipation, often dating from youth. Often fissure was associated with the piles and when the piles "came down" they stretched the sphincter curing the fissure. A cure could be effected in many cases without operation, but where the piles were always coming down an operation was necessary.

Mr. SWINFORD EDWARDS said that with regard to pruritus ani he found that 50 per cent. of the cases presented no sign of rectal disease. Forcible dilatation, continued long enough to cause temporary paralysis of the sphincter, with scraping of the eczematous part, would usually effect a cure. He thought that probing of a fistula was rarely necessary in order to discover the internal opening of a fistula if they followed Mr. Goodsall's rule. He thought that it was not always necessary to open up a sinus which ran up above the internal sphincters as many of them would be cured by injections after the other sinuses had been laid open. He had seen perforation of a rectal ulcer occur through the administration of an enema. A recto-vesical fistula could be attacked in several ways, by lumbar colotomy, as Mr. Bryant recommended, or by inguinal colotomy, which he preferred. He had also attacked the fistula directly both by the rectum through a posterior incision and from the bladder through a suprapubic incision. In some cases of uncomplicated piles he preferred the injection of a 1 in 5 solution of carbolic acid in glycerine to any other intervention. There ought to be no sloughing and the patient could walk home. In the case of strangulated piles he preferred to ligature them all at one sitting after forcible dilatation of the sphincter.

Mr. W. H. BATTLE asked whether in the fatal cases of rectal ulcer the appearances pointed to the existence of the condition known as ulcerative colitis. He himself had seen two cases of acute peritonitis from perforation of rectal ulcers and in one case hæmorrhage occurred from ulceration into an artery in the recto-vaginal septum. He thought that scraping the track of a fistula after it had been laid open hastened healing. He mentioned the case of a woman who had been treated for syphilitic stricture of the rectum who returned with some symptoms of obstruction which he found on examination to be due to the impaction of three sovereigns at the level of the stricture.

Mr. PEARCE GOULD asked Mr. Bryant whether he had had any experience of the method of immediate suture of the divided surfaces after operation for fistula which had been largely practised in Ireland. He agreed that the clamp and cautery method of dealing with piles was

quite satisfactory and trustworthy and there was perhaps less pain than after ligature. He asked Mr. Bryant whether he had had any experience of Whitehead's operation which he thought most surgeons regarded unfavourably. He said he himself always taught that when a patient with piles complained of acute pain this was an indication of the existence of some complication, uncomplicated piles being a singularly painless affection. He commented on the contrast between Mr. Goodsall's remark that if a patient with a fissure got prolapsing piles these would cure the fissure while intensifying the piles and Mr. Bryant's statement that if a fissure occurred in a patient suffering from hæmorrhoids it improved the hæmorrhoids and lessened the prolapse though it caused much suffering.

Mr. BRYANT, in reply, expressed his satisfaction at having brought the drawings of Mr. Gowlland before the society. He pointed out that his paper was simply based on his individual experience in respect of diseases of the rectum and did not purport to be an exhaustive description of the subject as a whole. He had not said anything about Whitehead's operation because his experience had not been large enough to enable him to form an opinion. He admitted that he did not like it, but thought this might possibly be due to the fact that he was not used to it. With respect to operations in phthisical patients he said he had taken the trouble to study the matter years ago and had been struck by the fact that so few cases of fistula came to the hospital associated with phthisis. It was true that those who did were marked and typical cases. Even in these, however, he had never been able to trace any harm from the operation: in fact, he looked upon it as an advantage in ridding the patient of a drain. He could safely say he had never been able to connect the rapid progress of the disease with any preceding operation for fistula. He still failed to see any necessity for habitually dividing the sphincter. He had done it in old-standing cases with much induration, in which he had not only gone through the sphincter but had taken away the edges of the ulcer wall. He agreed with Mr. Goodsall that division of a long sinus as a routine practice was a mistake. He dissented from the statement that fistulæ only had one internal opening. Although there was only one internal opening as a rule there were not a few exceptions. In one of the drawings before them there were several all communicating with the bowel. He presumed that even Mr. Edwards would not deal with a strangulated pile while acutely inflamed. Later, of course, if it began to slough it might be dealt with on general principles. He had seen many instances of the occurrence of fæcal extravasation from rectal ulcers. Ulcers might occur in this situation just as they occurred in the stomach, duodenum, and small intestine, but he had not recognised them as forming part of the condition known as ulcerative colitis though in one case this condition had misled him into performing colotomy for obstruction—of course without affording any relief. He had alluded in his paper to the value of scraping the sinus thoroughly in every case of fistula and he looked upon it as an essential point, especially in phthisis.

EPIDEMIOLOGICAL SOCIETY.

Typhoid Fever in Munich.

A MEETING of this society was held on Jan. 21st, Professor J. LANE NOTTER, President, being in the chair.

Dr. CHRISTOPHER CHILDS read a paper on the History of Typhoid Fever in Munich, illustrated by a number of tables. This paper we shall publish in full in an early issue. From Dr. Child's researches it appeared that the mortality from that disease had fallen in successive decades since 1850 from 202·4 to 147·8, 116·7, and 16·0 per 100,000 inhabitants, in 1891-96 to 5·5, and during the last three of those years to 3·0, while epidemics had been unknown since 1880. In England and Wales the death-rate had been 32.55 in the eighth decade of the present century, 19·76 in the ninth, and 17·38 in the period 1891-96. The trustworthiness of the returns from medical practitioners was confirmed by the close correspondence they showed with the monthly reports from the garrison and the hospitals, where every fatal case was verified by post mortem examination. Since during this period the water-supply had undergone great improvement it was but natural to ascribe to this cause the unparalleled reduction in the typhoid fever mortality, but a closer study of the facts disproved any such connexion. Munich stood on a wide, elevated plateau inclining from south to north, the high, open country above the town being almost uninhabited. The city was intersected by the River Isar and traversed by tributary streamlets (the Stadtbäche) in great part built over. The soil for many miles around was a bed of gravel from 10 ft. to 50 ft. in depth, resting on an impermeable clay which supported a copious sheet of ground-water flowing northwards and oscillating with considerable regularity, being highest in summer and autumn and lowest in the winter months. In the country this water was comparatively pure, but it became greatly polluted within the precincts of the city, especially when it rose to a high level so as to mingle with the soakage from the Stadtbäche and the pervious cesspits that had for centuries received the excreta of the inhabitants. In 1858 these cesspits were by order of the city authorities emptied, cleansed, and lined with cement and had since been gradually superseded by a system of well-constructed sewers planned by the English engineer, Mr. J. Gordon, who had previously carried out the sewerage of Frankfurt-am-Main. Until 1865 the city of Munich derived its water-supply from private wells and from the royal and municipal waterworks, the source of all being springs or wells drawing from the ground-water in or near the town and, as the analyses of Dr. Sendtner showed, all more or less polluted. But in that year a better supply was furnished to the south and west districts of the city by the Pettenkofer waterworks, which drew from the same source but further to the south and remote from human habitations, and in 1883 the Hochquelle Leitung or highland waterworks were opened, their supply being obtained from springs and streams impounded in the Maugfall Valley twenty miles distant among the Bavarian Alps and providing all parts of the city with a water of exceptional purity. In 1854 when cholera visited Munich Pettenkofer, believing firmly in the constant connexion between the water-supply and epidemics of that disease as well as of typhoid fever, instituted an inquiry into the source of the water used in every house in the city, but neither in that epidemic nor in subsequent outbreaks of typhoid fever could he trace any connexion between these and the local distribution or incidence in time of either disease. He did, however, find a remarkable correspondence between the rise and fall of the ground-water and the prevalence of typhoid fever, which was always greatest when the water was low and, as he had observed, least polluted. From these inquiries he came to the conclusion that in Munich at any rate the water had little to do with the spread of typhoid fever, the necessary conditions for which were: (1) the presence of the specific germ in the soil; (2) a susceptible population or one predisposed to infection; and (3) a soil saturated with organic matter, together with certain conditions of porosity affected by temperature and moisture or by the rise and fall of the ground-water. In 1865 the population supplied with the pure water from the Pettenkofer works suffered as heavily as the rest, and in 1884 those who still drank from the old city wells were not attacked more severely than those who had availed themselves of the still purer highland water. In short, the decline in the mortality began too late to be ascribed to the introduction of the former, and too soon to be explained by that of the latter of the new supplies, but it began at the time (1858-60) when the cesspits were rendered watertight, and culminated in 1880 with the simultaneous closure of 800 slaughter-houses in the city. Each of these events marked the cessation of a great and hitherto continuous source of pollution of the soil; though from ten to twenty years being requisite for the entire removal by natural means of the organic matter—the healing of the soil, as he called it—the improvement had continued, though more slowly, to the present time.

MIDLAND MEDICAL SOCIETY.

Exhibition of Cases.—Vesical Tumour.

A MEETING of this society was held in Birmingham on Jan. 19th, the President, Mr. J. W. TAYLOR, being in the chair.

Mr. LEONARD GAMGEE showed a case of Tubercular Peritonitis which had recovered after operation. The abdomen began to swell in September, 1895, when the child was four years old. In September, 1896, the abdomen was distended with fluid and so laparotomy was performed. Many pints of clear, straw-coloured fluid were evacuated.

The peritoneum was studded with small tubercles. The abdomen was closed without drainage. Since operation the fluid has never re-accumulated and the child is now, sixteen months after operation, in perfect health.

Dr. F. H. SIMPSON showed a case of Hysterical Paraplegia in a girl, aged seven years. Six weeks before examination the child got her legs wet and a week later complained of pains in the lower extremities. She was then kept at home; at the end of another week she was found one morning to have lost the use of her legs. Dr. Simpson saw the case three weeks from the onset of paralysis. The patient's condition was then as follows. There was complete paralysis of both lower extremities; the muscles of the left leg were flaccid and those of the right leg were in a state of over-tonicity scarcely amounting to "contracture" by offering some resistance to passive movement. The left knee-jerk was normal. The right knee-jerk appeared to be absent, a result really due to involuntary contraction of the flexors of the knee preventing extension. There was no ankle clonus. The attempt to flex the foot on the leg demonstrated great variability in the contractions of the paralysed muscles. There was anæsthesia of both legs, limited above by a horizontal line about four inches above the knee and loss of sensibility to both tactile and painful impression. There was no muscular atrophy. There was concentric contraction of the right visual field (moderate) and absolute inability to stand without support and assistance, the attempt causing an emotional outburst. The patient recovered the use of her legs completely and suddenly three days after examination.

Mr. BARLING related the following four cases of Vesical Tumour which had recently been under his care, and showed the specimens. The first was a case of recurrent fibro-papilloma. A woman, aged thirty-five years, was admitted to the General Hospital on Nov. 1st, 1897, complaining of great pain in passing urine and of blood in the urine. This patient had been operated upon four years previously for papilloma of the bladder and she had remained quite well for rather more than three years. The growth at the first operation had a rather broad and almost sessile attachment to the left side and floor of the bladder. The first symptom of recurrence was hæmorrhage and at the end of about three months frequency of micturition and discomfort in the act began to be felt. These symptoms all increased until micturition became very frequent and the pain extreme; eventually practical incontinence was produced. Suprapubic cystotomy was performed on this occasion as on the previous one and the cavity of the bladder was found to be filled with soft growth arising from the site of the previous tumour and from the posterior wall of the bladder as well. There was no induration or ulceration at the base of either growth and both were removed mainly by Thompson's forceps and by nasal polypus forceps. The hæmorrhage was so severe that the patient was rather collapsed at the time, but she made an excellent recovery, her comfort being greatly added to by the use of Sprengel's pump to drain the bladder, by which means her dressing was kept dry. Her case at the time of her first operation was an illustration of the value of the cystoscope in diagnosis. The patient had suffered from hæmaturia for a long time and on going to a hospital had been sounded for stone. None being felt the bladder was washed out, upon which cystitis followed. What with pain, frequent micturition, and hæmorrhage she was worn to a shadow and looked like a patient with advanced malignant growth. The cystoscope showed at once the cause of her trouble, and after removal of the tumour she was restored to excellent health and condition again. The second case was one of pedunculated papilloma in a man, aged forty-five years, who was admitted to hospital on Nov. 4th, 1897, complaining of frequent micturition and of pain during the act. He noticed a year previously a little blood in his urine; this increased in quantity but was intermittent in character. At the end of a few months frequent micturition in the daytime came on, then pain and occasional sudden cessation of the stream of urine. The cystoscope showed a pedunculated papilloma on the floor of the bladder just behind the left ureter. Bi-manual examination failed to show any infiltration or thickening of the bladder wall. The prostate was found generally enlarged. Suprapubic cystotomy was performed and a small pedunculated tumour removed by ligaturing its pedicle and snipping off with scissors. As in the last case Sprengel's pump was used to great advantage. The third case was one of sessile patches of papilloma. A man, aged sixty-two years, was admitted to the General Hospital on Dec. 30th, 1897, complaining of hæmaturia. He had been an invalid and unable to follow his occupation for some years, and during the last two months he had suffered constantly from hæmaturia and at the same time from dropsy. On admission the patient was very pale and anæmic, his urine ran away from him almost constantly, his legs were œdematous, there was a large quantity of blood in the urine, and his pulse was very feeble. Examination per rectum showed that he had a generally enlarged prostate. The patient was far too ill for complete investigation of his case and died of cardiac failure two days after admission. Post mortem small patches of sessile papilloma were found in the bladder and a large prostate. As far as could be determined the papilloma was the source of the hæmorrhage. The patient had marked cirrhosis of the liver. The last case related by Mr. Barling was a case of epithelioma. A single woman, aged sixty-three years, was first seen in September, 1897, complaining of hæmaturia, of which she had had several attacks in the preceding three months. Examination with the cystoscope showed a growth of about the size of a shilling on the floor of the bladder behind the trigone. Its surface was covered with papillæ, it was quite sessile and was commencing to ulcerate at its margin. Examination of the urine showed that it had a high specific gravity and contained sugar but there was no thirst or polyuria. It was believed that the tumour, although malignant, was just within reach of excision, but the condition of the urine and the rather senile condition of the patient made the operation hazardous and she was advised not to undergo operation unless pain or other symptoms became troublesome. In November, pain in micturition began to trouble the patient and increased in severity whilst at the same time increase in frequency in micturition arose until it became almost incessant and the hæmorrhage remained persistent and severe. On Dec. 30th the patient was admitted to hospital seeking relief if operation were feasible. Examination with the cystoscope showed that the growth had hugely extended and was widely ulcerated, whilst bi-manual examination showed that its base had infiltrated until it fixed the bladder firmly to the front of the uterus. The patient died of respiratory failure during the administration of chloroform whilst she was being examined. It might be mentioned that the sugar persisted in the urine. Post-mortem examination confirmed the clinical examination, showing a widely ulcerated epitheliomatous growth, very fixed, and so extending through the coats of the bladder that the omentum was adherent. There was no infection of glands. The main features of these cases and the earliest subject of complaint on the part of the patients was hæmaturia. In the first case cystitis was eventually associated with it and this appears to have arisen from the unfortunate treatment of washing out the bladder, a method often resorted to with very little justification. In the second case the symptoms of very painful and frequent micturition gave rise to the belief that the tumour might be malignant until cystoscopic examination negatived this. It is probable that both these symptoms and the occasional sudden cessation of the stream of urine were due to the floating of the tumour into the vesical orifice and its becoming engaged therein. In the third case the hæmorrhage was most profuse and confirmed the observation not infrequently made that the amount of hæmorrhage is no criterion of the size of the tumour.

Mr. BARLING also read a note on two cases of Colectomy for Carcinoma of Sigmoid Flexure.

LIVERPOOL MEDICAL INSTITUTION.

Exhibition of Cases and Specimens.—Uterine Fibroids.

A MEETING of this society was held on Jan. 20th, Dr. MACFIE CAMPBELL, President, being in the chair.

Dr. HUNT showed a case of Malignant Disease of the Larynx.

Mr. RICHARD WILLIAMS showed a case of Tubercle of the Iris in both Eyes.

Mr. W. T. CLEGG read notes of two cases of Bladder Tumour and two cases of Latent Renal Disease in which the cystoscope at once threw light upon the source of the symptoms.

Dr. T. R. BRADSHAW showed a well-marked case of Congenital Syphilis in a boy aged eleven years. There was a history of hemiplegia first on the right side and then on the

left side and there was late rigidity of the left arm with dislocation forwards of the head of the radius. The face strongly resembled that of a cretin, but although sight and hearing were affected there was no impairment of intelligence.

Dr. T. R. BRADSHAW also exhibited two rare Urinary Deposits—hanging-drop preparations of (*a*) cystin and blood (although blood corpuscles were present in large numbers the urine did not give the guaiacum reaction) and (*b*) a deposit from alkaline urine consisting of triple phosphates and spheres and dumb-bell crystals which he believed were calcium carbonate. The deposit was dissolved by acetic acid with effervescence.—Dr. BUCHANAN thought these last crystals might be urate of ammonium or a rare form of uric acid, the shape being dependent on the nature of the fluid in which they were deposited. Such a form of uric acid may be artificially stained. Calcium carbonate being colourless would serve to distinguish it from the specimen shown, which was deep orange in colour. Urate of ammonium and calcium carbonate are both soluble in acetic acid, the calcium salt with evolution of gas, urate of ammonium being decomposed and uric acid set free.

Dr. CATON showed a youth who during Acute Rheumatism developed a Systolic Bruit at the Mitral Valve with accentuation of the second sound at the pulmonary valve. This was one of about sixty cases in which by prolonged rest, treatment by small blisters, and potassic iodide Dr. Caton had sought to secure resolution of the endocarditis without injury to the valve cuspe. In this and in forty other cases the bruit had disappeared; in the remainder it was persistent.—Dr. CARTER said that on the general question of blistering he was surprised to find how greatly, and as he believed unreasonably, medical opinion had changed as to its supposed utility in acute rheumatism since the time when the late Dr. Herbert Davies had seemed to demonstrate on the secure basis of fact the good effects that followed its employment. A few years ago on his (Dr. Carter) prescribing blisters for the inflamed joint of a negro one of the students at the bedside asked him if he thought they were useful. He asked the student to watch the result and form his own opinion. On inquiring what had prompted the question a manual of clinical medicine for students was produced in which, without a tittle of evidence, the practice of employing blisters was condemned. It was stated by some writers on therapeutics that blisters over the heart would act as irritants. The successful cases of Dr. Caton showed evidence opposed to this, and some years ago he (Dr. Carter) had blistered the præcordia of white rabbits severely and in none of them was there any evidence of pericarditis or endocarditis on killing the rabbits.

Mr. ROBERT JONES exhibited a boy with Congenital Hypertrophy of the first and second Toes of the right foot, the great toe being four and a quarter inches long and the second three inches. An x ray photograph showed the first phalanx to be two inches long and thick in proportion.

Mr. ARTHUR WILSON showed a case of marked Hypertrophy of the second and third Toes in an infant.

Mr. HENRY BRIGGS detailed the clinical histories of thirteen cases of Uterine Fibroids the weights of which ranged from 9 oz. to 21b. ½oz., and submitted that in the treatment of them and of similar cases vaginal hysterectomy had advantages worth considering in the present unsettled state of the surgical treatment of uterine fibro-myomata. In each of the thirteen cases there were severe symptoms of considerable duration. Two patients were past the menopause (four years and three years); in these and in four others (of the ages of forty-four, forty-three, forty, and forty-five years) invalidism was due to pressure symptoms. In four patients pallor from hæmorrhage and in one pelvic pain, not relieved by long periods of total rest and other minor treatment, called for a radical operation. One patient, aged twenty seven years, had had acute peritonitis which became chronic and associated with an apoplectic ovary and adhesions low down. One patient, aged forty-one years, who was in hospital for two months with intermittent febrile attacks (103° F. at night) which were not checked by attention to the bladder, was completely relieved by removal of the uterus and the necrosing fibro-myoma. All the patients express themselves as cured, ten retain both appendages, and three have lost the diseased appendage of one side.—Dr. T. B. GRIMSDALE thought there was much to be said in favour of the vaginal route which is in fashion at the present time; still there were certain advantages which it was impossible to overlook that could be claimed for the abdominal route. He called attention to the age of one of the patients (twenty seven years) on whom the vaginal method had been adopted and suggested that if the abdominal route had been used it might have been possible to remove the tumour and leave the uterus undisturbed.—Dr. J. E GEMMELL considered the operation might be suitable for many cases, yet it seemed hardly a true surgical procedure to remove an organ because a tumour grew in its walls. In vaginal hysterectomy he favoured Doyen's method of splitting the uterus and cutting out V-shaped pieces if it was necessary to reduce the large bulk to facilitate delivery of it.—Dr. MURRAY CAIRNS and Dr. E. T. DAVIES also spoke.

PATHOLOGICAL SOCIETY OF MANCHESTER.

The Antrum of Highmore.—Pneumonia and Tuberculosis.—Exhibition of Specimens.

A MEETING of this society was held on Jan. 19th, Mr. C. E. RICHMOND, President, being in the chair.

Mr. WESTMACOTT read a short paper on the Antrum of Highmore, its variable anatomy with reference to empyema of the cavity, giving an account of recent work on the subject he had done in Vienna, and showed a number of dried and spirit preparations of the superior maxilla which he had prepared to illustrate the dimensions, situation, orifices, and relations of Highmore's cavity, as well as several photographs and lithographed plates. Mr. Westmacott's remarks showed the almost constant variation in the size of the antrum, in some cases differing very markedly on the two sides in the same individual, and the difficulties that are met with in deciding where an operation for the relief of empyema should be performed. He gave one or two practical guides, however, which would help the surgeon in his choice of the different situations. Finally, Mr. Westmacott spoke of some anatomical conditions which detracted somewhat from the value of trans-illumination of the antrum.

Dr. HARRIS exhibited specimens and recorded a case where, immediately following an injury to the chest, an apparently typical acute Croupous Pneumonia of the lower lobe of the left lung had resulted, but where the pneumonia did not show any signs of resolution, and the patient, who was a man sixty-eight years of age, gradually sank and died between ten and eleven weeks after the accident, up to which time he had had perfectly good health. At the post-mortem examination a thickened pleura over the lower lobe of the left lung was found together with consolidation of the lower lobe as well as of the lower part of the upper lobe. At several points the consolidation, which was evidently of comparatively recent origin, was breaking down into small cavities. At two or three points in the lung were old quiescent calcareous and fibroid foci, evidently the result of a long antecedent tuberculosis. The right lung was studded with recent acute miliary tubercles. The question of the origin of pneumonia from contusions of the chest was considered and the possibility in rare cases of injuries predisposing to the development of pulmonary tubercle. In the case recorded it was considered probable that an ordinary acute lobar pneumonia resulted from the accident and that tuberculosis became grafted upon the simple inflammatory lesion. The possibility of the tuberculous virus having been absorbed from the old patches of obsolescent tubercle was referred to.

Dr. MILLIGAN showed an Exostosis of unusual size removed from the nose of an elderly man by external operation.

Mr. STOCKS exhibited thirty-seven Calculi removed from the Bladder by Lateral Lithotomy at one sitting. They appeared to have originated from some "rape-seed" calculi passed from the kidney and being detained in the bladder became enveloped by a deposit of uric acid (?). This deposit, although showing evidence of concentric layers, showed some peculiar lines radiating from the central "rape seed" something like the lines seen on a transverse section of an orange. These stones had gone on increasing to about half an inch in diameter when some of them had split in the bladder forming nuclei for a fresh crop of calculi. Thus there were two series of calculi—(1) originating in the "rape-seed" calculi—the original stones; and (2) originating in the portions into which the former ones had split—secondary stones. They all were covered by a thick deposit

of phosphates and differed in appearance from each other in nowise save in their size.

The following card specimens were exhibited :—

Dr. KELYNACK: Double Duodenal Ulcer with Perforation.

Dr. YONGE: Blastomycetes in Hypertrophied Tonsils.

Mr. HIGGINSON: Ante-mortem Clot of Large Size from the Right Auricle of the Heart in a Tuberculous Case; and (2) Calcareous Tuberculous Mesenteric Glands.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Specimens and Cases.—Occurrence of Air-Embolism during Surgical Operations.—Chorea complicating Labour.

A MEETING of this society was held on Jan. 11th, the President, Dr. ARNOLD EVANS, being in the chair.

Dr. MAJOR gave a Microscopical Demonstration.

Mr. MORTON showed a Kidney Tumour weighing 6 lb. 2 oz. which had been removed post mortem from a child two years of age. During life the patient had an abdominal tumour which did not move on respiration. There was no pain and no pus in the urine. Microscopically the tumour proved to be a sarcoma containing in places striped muscle tissue.—Mr. MIALL, Dr. MAJOR, and Dr. CAMPBELL made remarks on the case and Mr. MORTON replied.

Dr. BASIL HALL showed (1) a Cutaneous Horn removed from the Ear; (2) 180 Gall-stones and three Stones from the Urinary Bladder (the stones were removed post mortem, having given rise to no symptoms during life); and (3) a plaster-cast of a Palatine Tooth.

Dr. KERR showed a patient with Subconjunctival Dislocation of the Lens upwards.

Dr. BASIL HALL read a paper on the Occurrence of Air-Embolism during Surgical Operations. After alluding to historical notices of air-embolism Dr. Hall discussed the subject from the following points of view: (1) the cause of the entry of air into veins; (2) the amount of air necessary to cause death; (3) the post-mortem appearances; (4) the locality of the wound; (5) the symptoms; and (6) the treatment. Cases illustrating the condition were quoted and especially one which Dr. Hall had recently met with in which while clearing out some cancerous axillary glands the axillary vein was wounded. Air was heard to enter, the patient became pallid, ceased to breathe and to all appearances was dead. After artificial respiration and the hypodermic injection of strychnine the patient slowly recovered.—The paper was discussed by Dr. EVANS, Dr. MAJOR, Dr. CAMPBELL, Dr. KERR, Dr. GOYDER, Dr. HORROCKS, and Dr. BRONNER, and Dr. HALL replied.

Mr. HANDCOCK read notes on a case of Chorea complicating Labour. The patient was delivered by forceps while under chloroform and ultimately made a good recovery.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Specimens.—Hydrocephalus.—Imbecility in Infancy.

A MEETING of this society was held on Jan. 19th, Sir JOHN BATTY TUKE, President, being in the chair.

Professor ANNANDALE showed several interesting specimens of Urinary Calculi. The first was one of considerable size which he had removed from a bladder which he himself had previously made. The patient was a boy, seven years of age, who up to the age of three years suffered from extroversion of the bladder, at which period Professor Annandale operated and made a new bladder. The boy had suffered no inconvenience until shortly before his admission. On examination there was a swelling over the region of the new bladder accompanied by pain. On passing an instrument a stone was detected. An incision was made directly over the stone, which was then cut down upon and extracted. The boy made an excellent recovery. The second was an oxalate of lime calculus removed without difficulty by median lithotomy from a man with an enlarged prostate. The peculiarity in this case was that the calculus had undergone spontaneous fracture in the bladder. The third calculus had been lodged in the lower part of the pelvis of the kidney. The patient had suffered from symptoms of renal calculus. An incision was made in the lumbar region and the calculus grasped and partly extracted. The hæmorrhage was, however, so severe and the patient so obviously sinking that Professor Annandale excised the kidney. It was found that a large abnormal vein had been severed. The patient made a good recovery. The next specimen Professor Annandale showed was a well-marked case of cancer of the rectum from a girl aged sixteen years. This was excised one month ago and the patient was now convalescent. He then showed a specimen of ankylosed elbow-joint with buried ulnar nerve. The patient came from Johannesburg with an injured elbow and having the fingers, elbow, and shoulder-joint stiff. Professor Annandale excised the elbow-joint and thought all would be well. He found, however, on looking at the excised joint that he had cut away from one and a quarter to one and a half inches of the ulnar nerve which had been embedded in the bone. Next day Mr. Hodsdon stitched together the cut ends of the nerve. It is too soon to say how the case will succeed. Professor Annandale then showed some cases of fracture. The first was a rare one of fracture through the upper part of the femur near its neck. The patient fell from a ladder and sustained many other injuries also. The next was from a man, aged seventy years, a great drunkard. He had a compound fracture of the thigh, which was very septic on admission. He then developed delirium tremens and had a sharp attack of pyæmia, which was treated successfully by injections of erysipelas antitoxin. He began to improve, but as the leg remained unsatisfactory amputation was performed and so the specimen was obtained. The patient's character has undergone a complete reformation. The third example was a fracture dislocation of the ankle-joint. The patient was a woman aged fifty-three years. A year previously she had had an accident to her ankle and the limb had remained useless. Amputation was performed and the specimen showed how nature had modified the injury.

Dr. JOHN THOMSON showed the Brain from the case of unilateral paresis and tremor of the left arm which he had shown at the previous meeting. The case was under the care of Dr. Playfair. The child's temperature began to rise and it was decided to operate. Dr. Joseph Bell trephined over the right motor centres. The intracranial tension was found to be markedly increased, but no tumour was found. The child died thirty-six hours subsequently. The post-mortem examination showed no superficial lesions on the brain with the exception of a few tubercles along the fissure of Sylvius, but a large round caseous mass, fully two inches by one and a half inches, was present in the right hemisphere. It was sharply demarcated and surrounded by a layer of softened brain tissue. It occupied and destroyed the lenticular and caudate nuclei and part of the internal capsule.

Dr. ALEXANDER BRUCE showed a specimen of great interest and rarity—the Rupture of an Aortic Aneurysm into the Bronchus. The aneurysm occupied the transverse part of the aorta and the first part of the descending aorta. There was a small secondary sac also which was directed towards and into the left bronchus compressing it entirely. In the corresponding lung a condition of "aneurysm phthisis" was set up. The lung was completely consolidated and contained many small caseous nodules. There was also complete pleural adhesion. The patient had been much exposed and on admission presented the symptoms of acute pneumonia; his temperature was high: the lung was extremely dull below and presented the skodaic note at the apex. So dull was the basal note that four aspirations were made with negative result. This consolidation extended up the lung towards the apex. The patient's temperature remained irregular, but he was thought to be improving, when one night he, when coughing, was seized with bleeding and almost immediately died. The diagnosis was rendered obscure by there being no displacement of the heart and no abnormal heart sounds.

Dr. SHENNAN showed the Larynx, Trachea, and Lungs from a woman, aged forty years, who died from diphtheria. She was attacked on a Friday and was admitted to the Leith Hospital on the Sunday morning but died that afternoon. The disease exhibited the usual characters of diphtheritic membrane which extended through the glottis into the trachea and lungs forming almost a complete tube and not occurring in patches as is the usual mode. The bacillus when cultivated showed only the long form and thus antitoxin would only have been of use if employed in the very early

stage of the disease. He also exhibited a specimen of impacted gall-stones in the common bile-duct.

Dr. RAINY exhibited a somewhat rare specimen. It was an infant showing Mal-development of the Cartilaginous Elements and consequently irregular formation of the bases (achondroplasia). The base of the skull is contracted, the nose grooved, and the tongue projecting. The arms and legs are short and badly formed, while the trunk is large and the abdomen prominent. The child lived for two hours. It was the third child the mother had borne, the other two being healthy.

Dr. ALEXANDER BRUCE next read a paper on Draining the Fourth Ventricle for Acquired Hydrocephalus. It was said that hydrocephalus was due to closure of the foramen of Majendie. If it were so, then opening this might relieve the symptoms. Mr. Parkin and Mr. Waterhouse have successfully opened the fourth ventricle, while Dr. Barlow and others have opened the lateral ventricle with success. In the present case the operation was attended by great temporary relief to the more urgent symptoms. Three weeks later death ensued—not, however, as a result of the operation. The necropsy showed that there existed basal meningitis with abscess in the kidney. The patient was a girl, aged thirteen years, who exhibited the characteristic facies of congenital syphilis—peg teeth, depressed nose, interstitial keratitis, &c. She had undergone an operation a year previously for disease of the left femur. In July, 1897, she began to complain of headache and pain in the back. Emaciation became extreme and the head was greatly retracted. The pupils were widely dilated and she soon became quite blind, whether as a result of disease or from inattention could not be made out as she gave no indication that she saw anything. The appetite was ravenous. No sooner was she finished with her dinner than she began asking for her tea. There was paralytic distension of the bladder and the urine contained pus and albumin. The pulse varied from 102 to 120 and the temperature was markedly irregular, rising as high as 103°. No headache or any other pain was complained of except that from a bedsore. The legs and arms were almost paralytic and exhibited only very slight movement. The lower limbs were always kept in a flexed position. An ulcer on the cornea was the cause of photophopia, but this healed and only returned a few days before death. There was no vomiting. During the last week of August external strabismus and nystagmus of the right eye manifested themselves. The child became weaker and the head retraction increased. Dysphagia became more and more marked. On Sept. 7th she was much cyanosed, had rigors and appeared to be dying. As she had derived no benefit from medical treatment it was resolved to employ surgical treatment as in all probability the case was one of chronic basal meningitis.—Mr. HAROLD STILES detailed the steps of the operation. Chloroform was administered, when the retraction of the head disappeared and the patient was laid face downwards. A horseshoe-shaped incision was made from mastoid to mastoid, the highest point of the curve being just below the occipital protuberance. The soft parts were then dissected down to the foramen magnum and a three-quarter inch trephine was applied to the bone a little above this opening. The dura mater bulged into the opening thus made and more of the bone was clipped away with bone pliers. The dura mater and arachnoid (which was thickened) were opened and the medullary tonsils were seen lying in close apposition. These were separated and above ten ounces of clear cerebro-spinal fluid escaped. On this draining away the parts regained their normal position. The dura mater was left unstitched and no bone was replaced: the soft parts were brought together by interrupted suture. The patient stood the operation well and soon asked for food. She had less headache and the temperature fell to normal and remained so for four days. On the fourth day it rose to 102° and subsequently was irregular. The mental condition remained in an improved state. Cerebro-spinal fluid exuded in large amount and the dressings were soaked two or three times daily. When the stitches were removed this fluid accumulated below the scalp and caused it to bulge and later a sinus formed. The corneal ulcer which had previously healed again appeared shortly before death. Mr. Stiles enumerated the operations recently performed for relief of intracranial pressure—viz., five cases by Mr. Parkin undertaken for tuberculous meningitis, chronic hydrocephalus and cerebellar tumour, and eight cases by Mr. Waterhouse. Of these hirteen cases five were reported as cured. In no case operated on for chronic hydrocephalus did any cure result. The operation seemed very suitable for chronic non-tuberculous basal meningitis and was more preferable than drainage of the lateral ventricle.—Dr. JAMES CARMICHAEL remarked on the uselessness of treatment hitherto in this disease and welcomed this new departure. In non-tuberculous meningitis the disease was very localised and consequently surgical interference was much more hopeful, whereas in the tuberculous variety it was only a local manifestation of a general disease and so surgical treatment could only relieve but not cure. Still if the symptoms could be relieved by operation then it should certainly be tried. He noted that in children with hydrocephalus after tapping the lateral ventricle death soon followed, whereas in slow drainage life was prolonged.—Dr. JOSEPH BELL related briefly certain cases which had come under his own observation where the flow of cerebro-spinal fluid was profuse.—Dr. COTTERILL stated that he could not think of anyone at least dying from an excessive flow of cerebro-spinal fluid. He had seen many buckets of fluid draining from a boy who lived from eight to ten months after puncture of the lateral ventricle and who at last died from marasmus.—In reply Dr. BRUCE said he regretted that the operation had not been performed earlier, but the difficulty of diagnosis between simple and tuberculous basal meningitis or tumour was very difficult. The long duration of the case militated against its being of a tuberculous nature, as also did the retention of consciousness up to the end of life and the absence of headache or of optic neuritis. A tumour in the middle lobe of the cerebellum might have produced similar symptoms. Besides this the child was syphilitic and thus in all probability suffered from chronic basal syphilitic meningitis.

Dr. JOHN THOMSON read a paper on the Diagnosis and Prognosis of Imbecility in Infancy and illustrated it by photographs (which were thrown upon the screen) from excellent examples of certain groups of disease which cause mental defects in children. He drew attention to the fact that some of these mental defects were accompanied by marked bodily deformity. In other groups, however, there was only a delay in the development of certain functions as shown perhaps by the child being long in holding up its head, backward in noticing objects or in recognising its mother, or advanced in infancy before acquiring the power of articulation. The first group of which he showed photographic examples was the microcephalic. It is a rare affection; the head is peculiar in shape, the forehead small, and the vertex pointed; the anterior fontanelle closes at a very early period—at ages varying from four and three-quarters to five and a half months. The hard palate is usually high. The body is generally well formed and the features are good. The head is often carried low in front of the body and not held up. Such children frequently suffer from convulsions and are mentally very dull. The prognosis as to life is not good as many die at an early age and before gaining admission to any institution for imbeciles. The hydrocephalic child also carries the head before the body and bent, the eyeballs are directed downwards, and the anterior fontanelle remains very large. There is no great mental defect; even in advanced cases where sections through the brain have shown great distension of the ventricles with only a thin layer of brain tissue remaining the mental condition has remained often very fair. In cases of imbecility as a result of this disease the children are often capable of a certain amount of education. Cerebral infantile paralysis was illustrated as a third group. If the meningeal hæmorrhage have taken place at the time of birth and have led to atrophy of the brain the prognosis as regards sanity is small. Often, however, in slight cases epileptic fits occur or stiffness and a spastic condition of the limbs remain. There is no tendency to premature closure of the fontanelle. A tendency to strabismus is often present. In extensive lesions growth is much delayed; thus a person of the age of twenty-three years has all the appearances of one aged fourteen years. The capacity for education depends on the extent and position of the lesion. The Mongolian type of idiocy is a comparatively common form of idiocy. The members of this group are frequently mistaken for cretins. The features are short, rounded, and marked; the eyes are placed near one another and their axes are very oblique. In nearly every case the tongue protrudes, the hair is scanty and dry, and the skin is dry and parched. When further advanced such imbeciles may become fat. The ligaments

of their joints are very lax and hence the range of movements of their limbs is very large. The wrists are narrow while the fingers are thick and pointed, tapering towards the tips. Their dentition is slow, often not commencing until the fifteenth month. Development generally is slow in such patients and they bear acute disease very badly. Tuberculosis is a frequent disease amongst them and thus they readily die. The prognosis as regards their mental condition is as follows. If they are carefully trained they may show an improvement, but at the best are never more than imbeciles of a low grade. If they survive to the age of puberty the administration of thyroid may do them some good. The diagnosis of cretinism is difficult in early infancy. As a rule little is seen amiss until the child is several months old. In one case the mother complained that the child was too quiet and suffered from great constipation. The tongue is usually very large, but the usual signs of cretinism develop themselves slowly. Achondroplasia has to be distinguished from cretinism. In this affection there is a curious bodily deformity which persists through life. The upper part of the head is large while the lower part is narrow and the tongue often protrudes. The arms and legs are very short and malformed while the trunk is large relatively as are also the hands. They are generally born prematurely and as a rule live only a short time. If they do survive they are moderately intelligent and often are exhibited as "short-legged dwarfs" in shows. They resemble cretins (the limbs are, however, not unduly small in cretins), but their skin is soft and their hair normal, while their thyroid is not large. As regards their hands there is a curious parting between the ring and middle fingers as if the hand were divided into two parts, the fingers on each side of this cleft sloping away from each other. Mongolian imbeciles resemble cretins much more closely when they are further advanced. Eclamptic idiocy may show itself in the form of epileptiform seizures or at first it may merely manifest itself in sudden starts of the head or arms or in sudden and transient losses of consciousness. In some cases where large numbers of fits occur a temporary imbecility results from which the child recovers under treatment by bromide of potassium and chloral.

The PRESIDENT thanked Dr. Thomson for his excellent paper and remarked on the value of being able to give an accurate prognosis regarding the mental condition of such children.

Reviews and Notices of Books.

Anatomy, Descriptive and Surgical. By HENRY GRAY, F.R.S. The Drawings by H. V. CARTER, M.D. Edited by T. PICKERING PICK, F.R.C.S. Eng., Senior Surgeon to St. George's Hospital. Fourteenth Edition. London and Bombay: Longmans, Green and Co. 1897. Pp. 1184. Price 36*s*.

THE fact of any book having reached its fourteenth edition is a sufficient indication of the value of that particular work, and this the last edition of a work which has been the adviser and companion of generations of medical students shows, as it should do, some improvements compared with its predecessors. For instance, some of the illustrations are altogether new and some of the old ones have been done away with and their place taken by new drawings dealing with the same subject.

The account of the bones and articulations is, as in the old editions, clear and good, and under the section of Articulations there is an admirable and valuable drawing by Mr. F. A. Barton showing the relations of the muscles which surround it to the capsule of the hip-joint. The somewhat complicated arrangement of the muscles in this region used to be at any rate, a sore trial to many a student, but by the drawing we refer to the difficulty is much lessened.

The description of the peritoneum has been taken as regards the developmental point of view from that written by Dr. Fred T. Brockway, Assistant Demonstrator of Anatomy, College of Physicians and Surgeons (Columbia University), New York. There is no doubt that the study of the peritoneum from the developmental point of view is the only way to really understand this complicated structure, but Dr. Brockway's account seems to us to be more embyrological than is necessary and to require for its understanding a knowledge of embryology on the part of students which few possess. The section describing the adult peritoneum is good and lays stress upon the (to most students) somewhat puzzling fact that the abdominal organs are really *outside* the peritoneal cavity and not inside, though it might be as well in a future edition to emphasise the fact that although the abdominal organs are seen on opening the abdominal cavity—i.e., the greater cavity of the peritoneum—yet they are so seen because of the extreme thinness and transparency of the investing peritoneum.

The portions of the work to which most exception must be taken are those sections devoted to surgical anatomy, especially those devoted to the surgery of the viscera. The space devoted to the subject is evidently a compromise and like all compromises fails of its object. There is too much for the second year or third year man and not enough for the more advanced student. For instance, in the section devoted to the intestine nothing is said as to the various operations for resecting portions of gut and uniting the divided ends, although Kraske's operation is briefly described, and in the section allotted to the liver there is no mention of laparotomy followed by plugging or suture of wounds of this viscus or of the gall-bladder. Although paracentesis of the pericardium is mentioned the possibility of successfully treating wounds of the heart by surgical interference is not referred to, while any reference to cerebral surgery is omitted altogether.

But as regards the anatomical part of the book it still remains one of the best upon the subject; the illustrations are very good and the schematic plans, especially of the cranial nerves, most valuable. If in future editions the surgical anatomy were to be either made more comprehensive and representative of modern surgery or, if this would unduly enlarge the book, omitted altogether it would be an improvement.

The Principles of Chemistry. By D. MENDELÉEFF. Translated from the Russian (sixth edition) by GEORGE KAMENSKY, A.R.S.M., of the Imperial Mint, St. Petersburg. Edited by T. A. LAWSON, B.Sc., Ph.D. In Two Volumes. London: Longmans, Green and Co. 1897. Price 36*s*.

THE first English edition of "The Principles of Chemistry" by the distinguished Russian chemist, Mendeléeff, was published in 1891, and a review of the work appeared in THE LANCET of Feb. 20th, 1892. Except for a few slight revisions and additions in accordance with recent advance there is little alteration in the present edition, but this time the editorship has been undertaken by Dr. Lawson, of the City and Guilds of the London Institute, instead of by Mr. A. J. Greenaway, the present sub-editor of the journal of the Chemical Society. The original plan of the work is adhered to—that is, the subject matter is divided into text and footnotes, the latter containing details that "are deemed unneccessary for a first acquaintance with chemistry." Thus while the book is an advanced work, yet the arrangement of the subject is such as to suit the requirements of both elementary and advanced readers. The beginner will certainly be attracted by the simple yet instructive way in which the story is told. He will read with increasing pleasure and profit each succeeding chapter as it takes him step by step from simple truths to larger realisations. The clear and effective style of narration recalls the writings of Huxley, Tyndall, and Faraday. To these great exponents of the foundations of science, indeed, we would add the name of Mendeléeff, who has done more to systematise chemical science than any philosopher since the days of Dalton. The great principles which underlie the periodic law must remain

whatever modification of the interpretation of the law may be in future desirable. Like all natural laws it does not appear perfect, and it would be a sorry thing, perhaps, if everything in nature could be reduced to something cut quite square and perfectly symmetrical. Recent discoveries have led to much scepticism as to the validity of the great law which Mendeléeff so cleverly elaborated, the foundation of which, however, was laid by our own countryman, Mr. J. A. R. Newlands, in his paper read before the Chemical Society many years ago on the law of octaves. Mr. Newlands is still amongst us and not very long ago received the Davy medal from the Royal Society in recognition of the value of his early contributions upon this subject. Argon and helion have perplexed chemists considerably and the chief puzzle has been, and is, to find places for them in Mendeléeff's classification. Some, but we think rather precipitately, have concluded that Professor Ramsay and Lord Raleigh have discovered elements which are destined to shake our faith in the periodic law. Considering that the data in regard to the chemical and physical properties of these bodies are not yet complete we do not for the present share these views. Mendeléeff himself uses pretty forcible arguments in favour of the view that argon is allotropic nitrogen (N_3) much in the same way as ozone is an allotrope of oxygen (O_3). It is premature, however, to form any definite conclusion. Of helion Mendeléeff says little, but the present edition is sufficiently up-to-date to record its discovery in certain minerals by Professor Ramsay. As is well known, when Mendeléeff drew up his classification he was able by observing certain gaps to predict the existence and probable discovery of new elements. In certain cases he did this with remarkable success and actually foretold their properties in some detail before they were discovered. He has never surmised the existence of a very inert body such as argon has proved to be. The question arises—are these new bodies elements, or will time prove that they can be split up into other elements places for which will be found with little difficulty in Mendeléeff's classification? As yet helion and argon are, so to speak, pieces which fail to fit in and help us to solve the puzzle.

As we have said before, the book sets forth the history and evolution of chemical science in a very charming and readable way. The plan is such that the advanced reader will find just the pabulum he seeks and expects to find from so classic an author as Mendeléeff, while the beginner is so gently introduced to the great facts and principles connected with the composition and constitution of matter that his interest will soon be aroused in those more advanced portions of the work which in copious footnotes are separated from the elementary truisms. The English translation ranks without doubt as one of the first amongst the English standard works on chemistry.

The Span of Gestation and the Cause of Birth: a Study of the Critical Period and its Effects in Mammalia. By JOHN BEARD, D.Sc., University Lecturer in Comparative Embryology and in Vertebrate Morphology, Edinburgh. Jena: Gustav Fischer. 1897. Pp. 132. Price 3 marks.

IN the development of the embryo it is well known that there are two stages, one in which the fœtus draws its supplies from the yelk sac and a second in which the allantois is formed with its system of vessels; these penetrating into the chorionic villi constitute the placenta. The parts of the embryo are all differentiated at the close of the first period and this period Dr. Beard terms the "critical phase" and its termination the "critical period." During the "critical e" the active absorption of the yelk is effected by the hypoblastic cells. Subsequently to that period absorption is effected by the epiblast. The discharge of the embryo from the uterus or "birth" may occur at the "critical period" and does actually so occur in the marsupials, whilst in those animals in which gestation is prolonged beyond that period the event is accompanied by the degeneration or disappearance of various parts and organs just as those characteristic of the larva or phorozoon stage in invertebrata are thrown off—such, for example, as the hypophysis cerebri, the notochord, merocytes, and yelk sac. The results of researches made by Dr. Beard, which are supported by those of other observers, have led him to the conclusion that in the mouse at least there is an immediate and direct relation between the "critical phase" and the periods at which ovulation occurs, each being of nearly equal duration, though the intervals between two successive ovulations are a few hours longer than the critical phase. Were it not so, Dr. Beard argues, were the ovulation intervals to coincide with the critical phase, the processes of birth, of heat, and of copulation, all of which occupy some time, would cause the next ensuing ovulation to occur simultaneously with the critical phase, that is, with the process of birth, and would therefore render it abortive. He believes the interval of time elapsing between the fertilisation of the ovum and the attainment of the critical phase to be fairly constant and he defines it as "that period of time which in any given species of metatherian or eutherian mammal represents the average duration of development from the moment of fertilisation until with the critical period all the parts or foundations of the embryo have come into existence." This interval Dr. Beard designates "the critical unit." The critical unit differs considerably in length in different orders and genera and probably even in different species. Thus in the white mouse it is from 9 days 16 hours to 9 days 20 hours; in the English rabbit from 15 days 6 hours to 15 days 12 hours; in the cavy 21 or 22 days; in the cat 28 days; in the dog from 29 to 31 days; in the pig from 28 to 30 days; in the sheep from 29 to 30 days; in the cow from 39 to 42 days; in the horse 42 days; and in man from 46 to 47 days. Dr. Beard has been led to the conclusion that originally the critical unit of any mammal was short, as it still is in the opossum, that it was then doubled or trebled and that simultaneously the ovulation unit was in like manner doubled or trebled in many eutheria—i.e., animals above the monotremes and marsupials—whilst in some instances the critical unit has been doubled a second time without any duplication of the ovulation unit. The evolution of the allantoic placenta is then shown to have an important influence in prolonging the period of gestation. The development of the allantoic vessels constituted a new provision for the nutrition of the embryo, which was then no longer expelled at the critical period, and the marsupial pouch was no longer needed and therefore disappeared. Menstruation Dr. Beard considers to be an abortion at the old critical period and is one in which the decidua belongs to a missing $22\frac{1}{2}$ to $23\frac{1}{2}$ days embryo and thus in all its phenomena it resembles a parturition. The duration of gestation is the result of the recurrence of a certain number of critical and of ovulation units. The views advanced by Dr. Beard appear to us to be original and to be well worthy the attention of all those who are interested in embryology, whilst they have a very practical bearing on such subjects as menstruation, abortion, and childbirth. Before they can be accepted, however, much more information is required in regard to the ovulation period and further proofs must be adduced that the two clocks which indicate the ovulation interval and the gestation period are set to such very exact time. It is remarkable, too, that the duration of the "critical" phase should vary considerably even in allied species. In fact, although it may be admitted that Dr. Beard has made out a very good case, it still requires

the support of independent observation and a more accurate knowledge of details, whilst other well-established factors which aid in determining the span of gestation must not be overlooked.

The Purification of Sewage and Water. By W. J. DIBDIN, F.I.C., F.C.S. London: The Sanitary Publishing Co., Ltd., 5, Fetter-lane, E.C. 1897. Price 21*s*.

MR. DIBDIN'S work, in his recent capacity as chemist to the London County Council, is well known. He has had peculiar opportunities for studying great sanitary problems and that he has not studied them in vain is evident from the work published from time to time in the official reports of the London County Council and now practically summarised in the convenient form of the book before us. At once we may say that it is a most interesting work. It deals, for instance, with the recent developments in the treatment of sewage by bacteriological methods. Years ago we maintained in these columns that in principle the treatment of sewage with chemicals was illogical and wrong. Nature provides a method of purification, and, like all Nature's operations, it is not a wasteful process. Chemical treatment, it is true, consolidated sewage and rendered it to some extent inoffensive, but that is all; nobody could use the product with any profit and it was difficult to dispose of it satisfactorily. The study of the conditions under which the specific organisms work favourably has revealed, as Mr. Dibdin has shown, the possibility of employing these microscopic engineers to do the work not only of removing what is a source of offence and pollution but of converting it into a harmless and, indeed, a valuable product. Instead of, for example, the solid matters of sewage being separated by chemical precipitation to serve no end and not improbably become a danger to the public health it may be converted, by the silent but certain operations of specific micro-organisms, into nitrates, carbonic acid, and water, all of which are essential to plant life. Thus the great cyclic operations apparent in all Nature's work are completed, whereas by chemical treatment they are impeded with, as might be anticipated, unsatisfactory results.

Mr. Dibdin has contributed, as the present work shows, not a little to the satisfactory solution of this vitally important problem. His instructive and interesting experiments with the sewage discharge at the great London sewage outfalls are convincing on this head. Mr. Dibdin's every-day duties as chemist to the London County Council also have brought him intimately into contact with the question of the purity of the London water-supply and his work in this direction has been repeatedly referred to in the columns of THE LANCET. Notably, there is the inquiry he conducted under the auspices of the Council into the available sources of supply in Wales, and he certainly did good work when he caused considerable activity amongst the metropolitan water companies by his comparatively recent and unfavourable remarks upon the quality of metropolitan water which were based chiefly upon more careful attention being paid to the kind and amount of suspended impurity. Mr. Dibdin has devised a micro-filter which serves not only to estimate small quantities of suspended matter, but in isolating it to enable some idea of its nature to be gained. All these and kindred subjects are dealt with in the book. It need hardly be added that the book is sure to be held in estimation by all those interested in sanitary advance. It is an accurate and valuable gauge of the present position of matters relating to the more pressing questions of modern hygiene. The work seems to be somewhat expensive considering its size, but doubtless this is in part due to the illustrations and tables with which it abounds.

The Roentgen Rays in Medical Work. By DAVID WALSH, M.D. Edin. London: Ballière, Tindall, and Cox, 20–21, King William street, Strand. 1897. Price 6*s*.

DR. WALSH'S contribution bears evidence of his own acquaintance with the practical details of x ray work. He has produced an excellent volume on the subject in its application to medical work. He has spared no pains to make the material reliable and to provide the reader with some remarkably fine illustrations in practice. The x ray pictures are the best we have seen. The difficulty of reproducing in an illustration the points in a case is well known and it can only be done satisfactorily in the way Dr. Walsh has adopted—that is, by printing upon specially thick and smooth paper. The book opens Part I. with an introductory section upon electrical apparatus and methods by Mr. J. E. Greenhill. In this section are described the apparatus and requisites now employed for the successful production of x ray photographs. Part II., by Dr. Walsh, is devoted to medical and surgical applications. In these chapters will be found an exceedingly interesting series of cases with accompanying illustrations the excellence of which we have already referred to. In the appendix the author has wisely reproduced the paper which Professor Roentgen communicated to the Würtzburg Physico-Medical Society in December, 1895. Dr. Walsh's book will be usefully consulted by those medical practitioners who are pursuing this interesting line of study.

LIBRARY TABLE.

An Elementary Course of Practical Organic Chemistry. By F. C. GARRETT, M.Sc. Vict. & Dunelm., Assistant Lecturer and Demonstrator in Chemistry, the Durham College of Science, Newcastle-on-Tyne, and ARTHUR HARDEN, M Sc. Vict., Ph.D., Assistant Lecturer and Demonstrator in Chemistry, Owens College, Manchester. London: Longmans, Green, and Co. 1897. Price 2*s*.—The authors have produced an excellent little course of practical organic chemistry, the kind of work that lecturers and demonstrators in medical schools have long looked for to satisfy the elementary requirements of practical organic work for the M.B. examination. The authors have been careful to arrange their work in a corresponding sequence to lectures on this subject. The omission of a similar scheme for the "closed chain" compounds is to be regretted, but we presume it is their intention to issue it in a separate form and so provide more than a "partial solution of the problem."

Remarks on the Uses of some of the Bazaar Medicines and Common Medical Plants of India. By EDWARD JOHN WARING, C.I.E., M.D., F.R.C.P., Surgeon-Major (retired) Her Majesty's Indian Army, &c. Fifth edition. London: J. and A. Churchill. 1897. Pp. 288. Price 5*s*.—That this work supplies a want in India is proved by its having reached a fifth edition. The first part of the book deals with the Bazaar Medicines and Indian Medical Plants. These are arranged alphabetically so as to be easy of reference. A description of each drug is given, then its native name in the vernacular of the various districts, next its preparations, and finally its therapeutic properties and mode of administration. A vast amount of information is thus afforded. The whole work is written in a popular style, as it is intended not only for the use of medical men, but also for those who are wholly ignorant of, or very partially acquainted with, matters pharmaceutical. The work was first issued in an elementary form about thirty-seven years ago, the second edition having been published fourteen years later. Medical men are now scattered through India in much larger numbers than they were at that time, but there are still numerous districts where medical aid cannot be

obtained for some time, and to persons compelled to reside in such neighbourhoods such a book as this must be of the utmost value. The second part consists of a synopsis or index of diseases, giving in brief and plain terms the treatment to be adopted in case of illness until the services of a medical man can be obtained. The treatment of poisoning is included. Four useful appendices then follow: (*a*) Directions for Restoring the Apparently Dead from Drowning; (*b*) Summary of Treatment of Persons Bitten by Venomous Snakes (reprinted from Sir Joseph Fayrer's work "The Thanatophidia of India"); (*c*) Method of Treatment of Small-pox by means of Carbolised Oil (by Dr. J. E. T. Aitchison, M.D. Edin., C.I.E.); and (*d*) On the Use of the Clinical Thermometer. We feel sure that the present edition will be as successful as its predecessors.

Year-book of Pharmacy. With the Transactions of the British Pharmaceutical Conference at the Thirty-fourth Annual Meeting held at Glasgow, August, 1897. London: J. & A. Churchill. 1897. Pp. 492.—This volume contains abstracts of papers relating to pharmacy, materia medica, and chemistry contributed to British and foreign journals from July 1st, 1896, to June 30th, 1897, and, as the title shows, the Transactions of the British Pharmaceutical Conference held at Glasgow in August of this year, when Dr. C. Symes, of Liverpool, presided. A large number of new remedies are described and much information is given as regards the tendency which is exhibited to enrich the resources of materia materia by the products of the laboratory. In the proceedings of the Conference is a report of the President's address in which he reviewed the history of the association from its foundation in 1863.

JOURNALS AND REVIEWS.

Birmingham Medical Review.—Dr. F. J. Allen, Professor of Physiology in Mason College, gives a very interesting account of his personal experience of the Pasteur anti-rabic treatment. He was bitten on the fingers by a rabid dog on July 18th, 1897, and was under treatment at the Pasteur Institute in Paris within forty-eight hours of the accident. The chief constitutional symptom that he noticed was a peculiar form of lassitude occurring in the afternoon and early evening. One of the wounds healed very slowly; it was more than a month before the skin closed over it. Dr. Allen writes very approvingly of the treatment.

Edinburgh Medical Journal.—In the opening paper Dr. W. Allan Jamieson describes the symptoms and pathology of eczema palmare and plantare. He has found very satisfactory results from the use of Unna's oxidised pyrogallic acid made into an ointment with lanolin. Details of several cases are given. Mr. Henry Morris writes on Injuries of the Ureter, and Dr. G. V. Poore on the Services rendered to Medicine by Bacteriology. Dr. A. Veitch describes a case in which he induced premature labour at the beginning of the fifth month. Uterine action not being excited by the passing of sounds and a bougie, three ounces of pure glycerine were injected through a metal catheter. The patient was almost immediately seized with an intense rigor, which lasted about an hour. Strong pains set in a little later, the ovum was expelled entire, and the woman made an uninterrupted recovery.

Scottish Medical and Surgical Journal.—The first of the ten original articles in this number is a description of a case in which Dr. David MacEwan (Dundee) resected four or five inches of the hepatic flexure of the colon on account of an annular constriction due to epithelioma. The patient made a good recovery. Professor Stephenson (Aberdeen) discusses the Anatomical Phenomena presented by the Uterus in the Third Stage of Labour. Brigade-Surgeon-Lieutenant-Colonel James Arnott publishes an address on Plague delivered by him before the Medico-Chirurgical Society of Glasgow University.

Dublin Journal of Medical Science.—In the opening article Mr. J. S. McArdle describes a New Operation for Nephrectomy. After opening the peritoneum by an incision in the semilunar line he makes a transperitoneal examination of the kidney on the opposite side, closes the peritoneum, and carries a second incision backwards from the centre of the first so as to obtain access to the affected kidney.

Analytical Records
FROM
THE LANCET LABORATORY.

MINERVA TONIC PREPARATIONS.
(THE MINERVA CO., 58, MARGARET-STREET, SYDNEY, AND LONDON.)

WE find no novel feature in the composition of these preparations. The first on the list is a combination of cod-liver oil with the hypophosphites of calcium, sodium, and potassium to which pepsin is added. The second, described as "Tonic No. 1," is composed of phosphate of iron with quinine and strychnine and certain flavouring agents. The third on the list, described as "Tonic No. 2," is made up of the hypophosphites of iron, potassium, sodium, calcium, and manganese, with quinine and strychnine. Obviously all these formulæ are well known and approved in the making up of tonic and restorative mixtures.

FULLER'S SUBSTITUTE.
(FULLER'S, LIMITED, 205, REGENT-STREET, W.)

Although a confection this may be regarded as a useful means of administering well known medicaments of a highly nutritive and tonic character. The "substitute" or "caramel" contains a definite proportion of emulsified oil combined with the active principles of malt and an approved amount of the hypophosphites of calcium and sodium. It is rich also in nitrogenous substances which contribute to the building up of muscular tissue. The flavour is peculiarly "dry" and mealy and not unlike chocolate.

RUSKS.
(WALTER HUBBARD, PARTICK, GLASGOW.)

On examination these rusks proved to contain both carbohydrates and nitrogenous constituents in an easily assimilable form. This is due partly to the selection of superior materials and partly to care devoted to the cooking process. The rusks are almost entirely dissolved during the process of mastication, a fact which affords distinct evidence of their easily digestible property. The rusks are of uniform texture and desirably crisp and not excessively sweet to the taste. They are free, according to microscopical examination, from irritating particles.

NON-FERMENTED GRAPE WINES (FIRST SWISS BRAND).
(THE FIRST SWISS WINE "SANS ALCOHOL" COMPANY, LIMITED, BERN, SWITZERLAND, AND 39, EASTCHEAP, E.C.)

We could find no important quantity of alcohol in any of these preparations. The preparations include a champagne (white) called "Juliet," and a champagne (red) called "Romeo," and a still red wine also called "Romeo." Our examination leaves no doubt at all that these preparations consist of pure grape juice and moreover are free from objectionable preservatives. The flavour of each is pleasantly fruity but decidedly syrupy and sweet. The still wine affords a very agreeable beverage, especially when mixed with aerated water. The satisfactory preparation of a clear and permanent grape juice can only have been the result of a well-considered process. Prior to bottling the most rigid care is taken to destroy any fermenting agents that may be

present. These preparations afford undoubtedly a salutary beverage, presenting all the valued characteristics of grape juice itself. An analysis of the still red wine gave the following results:—Alcohol, *nil;* extractive matters, 16·35 per cent.; and mineral matter (chiefly carbonates of phosphate and potassium), 10·32 per cent. Some proof of the absence of preservatives is afforded by the fact that on keeping the wine, after opening, at 100° F. fermentation soon commenced. In spite of the method adopted to exclude ferments there is no suspicion of a caramel-like flavour in the wine.

New Inventions.

A NEW CHAMPAGNE TAP AND CORK.

As is well known it is very desirable for many purposes to be able to keep champagne bright and sparkling to the end in cases where only a glassful or so is consumed at one time. Hitherto this has not been attained in a way that can be regarded as satisfactory or convenient. Above all it is necessary that there may be no risk of metallic contamination as might happen with the hollow metal corkscrew tap. Mr. Hilgers, of Old Trinity House, Water-lane, Great Tower-street, E.C., has recently introduced a distinct improvement, we think, in this direction which should render the administration of champagne in the sick-room an easy and satisfactory matter. The construction of the new tap will be readily understood from the accompanying diagram. In the first place a metal cover is placed upon the champagne bottle. This is provided at the top with a screw upon which the tap itself may easily be fitted. A few turns make the attachment quite tight. The tap itself is composed of porcelain, inside and out, and the valve is a kind of porcelain float provided with a small rubber bearing. The float is lifted from its bearings by means of the lever situated inside the curved handle. The whole fitting gives to the champagne bottle the appearance of a jug. We have tried the apparatus and find, as the inventor claims, that it keeps the wine sparkling to the last delivered wineglassful. This appliance should prove of the greatest service in hospitals and in sick-rooms. Mr. Hilgers has also brought to our notice what he calls "an economic cork." The construction of this, again, will be apparent in the illustrations given above. It consists of two tubes one within the other. The outer tube serves for the passage of the outflowing wine, and the inner tube for the air to enter before the wine will flow. Both tubes are opened by means of a lever which can be easily turned with the thumb while the hand grasps the neck of the bottle.

IMPROVED APPLIANCE FOR SPINAL CARIES.

An appliance intended to be substituted for the ordinary Sayre's jurymast has been submitted to us by Messrs. Salt and Son, of Corporation-street, Birmingham. Sayre's jurymast allows considerable movement to the head, a condition at variance with the accepted principle of treating disease of joints by rest as far as possible. In Messrs. Salt and Son's appliance the jurymast is attached to the body in the ordinary way by means of a plaster poroplastic felt corset and rises no higher than the occiput. It is here bifurcated, the arms being carried around the head as illustrated and terminating in small pads placed slightly above the temples. From these points the head is slung by means of straps for the chin and occiput fitted in the usual manner. The advantages of this arrangement are readily perceived. The pads, carefully fitted to rest against the head without pressure, prevent lateral movement,

FIG. 1.

Salt's appliance.

FIG. 2.

Ordinary jurymast.

and, as will be seen from a comparison of the new appliance with an ordinary jurymast, the usual headgear can be worn and the instrument is far less unsightly than the older pattern. By a simple modification consisting in lowering one arm and placing a quadrant action at the point of bifurcation the apparatus becomes a most effective appliance for torticollis, inasmuch as the axis of the quadrant is placed at the most advantageous position for rotating the head.

THE OMEGA GAS STOVE.

The Omega gas stove is constructed in compliance with well known principles. It consists essentially of a specially designed Bunsen burner the flame of which plays up against an asbestos plate, and the heat currents and the hot products of combustion are compelled to travel downward, upward, and again downward, and so on, before they finally emerge into the air. This plan obviously leads to the flame being surrounded with heat, and also warms the air which takes part in the combustion. To some extent, therefore, the stove is constructed on the principle of the regenerative burner. As is well known, it is the cooling of the flame which is apt to produce disagreeable and injurious products of combustion. We have submitted this stove to fair trial with satisfactory results. It is free from smell, and the heat evolved possesses no objectionable qualities. Of course the products of combustion are discharged into the air, but assuming the working conditions are sound these products would only consist practically of carbonic acid and moisture. We see no objection to flueless gas stoves so long as combustion is complete and the consumption of gas, as in the present instance, is comparatively low. The stove is not free from the one objection inseparable from atmospheric burners—namely, the noise of air entering into the gas at the foot of the burner. The stove was sent to us by Mr. E. Harry Woods, of 8, Victoria-street, Westminster, S.W.

THE LANCET.

LONDON: SATURDAY, JANUARY 29, 1898.

OF all infectious diseases there is none concerning which our knowledge upon its etiology, or in other words its mode of transmission, is more complete than typhoid fever. This knowledge has been gradually built up during the half century that has elapsed since typhoid fever was definitely differentiated from other forms of continued fever. It would be instructive as a matter of medical history to trace the evolution of opinion upon this subject, the growth of the conviction that infection takes place mainly by way of the alimentary tract, where the morbid lesions characteristic of the disease are to be found; the notion that contamination of ingesta, especially of water, by the products of fæcal fermentation was responsible in great measure for infection; the final arrival at the point where we now stand—namely, that typhoid fever never arises *de novo*, but that its living germ—the typhoid bacillus—must be transmitted from the sick to the healthy mostly by means of the intestinal evacuations, but also not improbably by the urine and the breath. It may still be a moot point whether under certain conditions this microbe can exist even for long periods outside the body, just as it seems to be proved that it may long remain in the body after all of the evidences of its toxic action have passed away. How, then, can a disease having such an origin be prevented from spreading, and is there any prospect of its ever being eradicated? The instructive debate recently held at the Royal Medical and Chirurgical Society affords a partial answer to these and similar questions, but it showed at the same time how defective are the means at present provided for directly attacking the evil. Dr. POORE, whose able exposition of the subject in his opening remarks left nothing to be desired, had little difficulty in showing that the epidemic outbursts of typhoid fever of recent years were explicable on the assumption of contamination of water- and food-supplies by the specific poison. Although he dwelt on the possibilities of the pollution of the water-supply at its source or in its course and at its peripheral distribution, he at the same time indicated what were the best measures to be taken to prevent such pollution. Many of the speakers concurred, as no one could fail to concur, in such necessary precautions as vigilance in respect to the collection, storage, and distribution of water intended for consumption, and the supervision of all works pertaining to the distribution, so as to prevent any possible defects of construction which could afford means for contamination. But Dr. POORE went further than this. He showed how the risk of such contamination of drinking-water had been intensified by the introduction of the methods of disposal of excreta that obtain in all large towns, and his indictment of the water-carriage system of sewerage cannot be lightly set aside. It is nevertheless true that with the exercise of the same vigilance in respect to sewerage and drainage as is advised for the supply of water the risks may be lessened. Yet they must exist by the very nature of the case, and the actual fact of the pollution will not be revealed until, as Dr. CHILDS pointed out, the presence of cases of typhoid fever in a community reveals their existence. In spite of this liability Sir RICHARD THORNE did well to show that even in respect to typhoid fever this country has gained immensely by the improvement of water-supplies and the more general adoption of the system of water-carriage of the excreta of towns, replacing the old cesspools and middens of former days. Typhoid fever was more prevalent then, for it was general and endemic, than it is now, when its endemic prevalence is lessened, although its epidemic prevalence may now and again become strikingly prominent. Dr. CORFIELD'S reference to Lyons is a strong confirmation of the accuracy of Sir RICHARD THORNE'S inferences derived from the mortality statistics of this country, for Lyons, as he said, is a "city of cesspools." At the same time he remarked that Lyons was singularly immune from cholera, the disease which shares with typhoid fever the character of being propagated through infected water-supply. The epidemic appearance in each case is due to water-borne infection. May we not venture then to affirm that if through the exercise of wise sanitary precautions cholera may be prevented from spreading in towns where the water-carriage of excreta prevails there is no reason why typhoid fever should not be also prevented to an almost equal extent.

In a country such as ours, where typhoid fever is endemic the liability to specific contamination of water and food-supplies must be constantly borne in mind. Theoretically, the systematic examination of water-supplies and of sewage for the early detection of the typhoid bacillus, as advised and carried out by Dr. R. BOYCE, would seem to be a rational procedure, and we do not wish to underrate its value. Yet in practice we fear but little reliance could be placed on these investigations in the anticipation of an outbreak, and one speaker, Mr. DURHAM, averred that the recognition of the bacillus was no simple matter. It is of course of great importance that water intended for consumption should be systematically and thoroughly tested as to its purity; but we have hardly yet arrived at that state of perfection in chemical and bacteriological analysis as to define with certainty each specific impurity that a sample of water may possess. And, after all, what would the microscopic analysis of a few drops of water from the mains of a large city teach as to the bulk of the contents of the latter? Nor does the notification of an isolated case of the disease assist us much in determining its origin. It may, of course, be due to some obvious local condition; it may, on the other hand, be the forerunner of an epidemic of widespread extent. Compulsory notification, as Dr. SEATON pointed out, is of the greatest assistance to the health officer, but it is often not until the number of cases have grown considerably that he is able to realise the existence of an epidemic or to trace out the sources of its origin. And when this can be done, as, for example, was done at Clifton, and the origin and nature of the outbreak clearly ascertained, then can effective measures be taken to arrest the spread of the disease. Notification of infectious diseases is the more valuable the earlier the diagnosis can be

made with certainty, and herein typhoid fever, one of the most insidious of diseases, is at a disadvantage. It probably often happens that the first cases of an epidemic pass unrecognised or their true nature is not revealed until many days have elapsed. Attention was drawn by more than one speaker to the occurrence of outbreaks of diarrhœa which may precede an outbreak of typhoid fever, and Dr. WOODHEAD'S observation with regard to the similarity of conditions which favour the growth of the bacillus coli and the typhoid bacillus gives point to these facts. We observe that Mr. DURHAM mistrusts the value of WIDAL'S serum test as ordinarily applied, but it will be seen from Professor DELÉPINE'S paper on another page that this scepticism is not shared by others. However, as we lately took Mr. TIVY to task for objecting to the inferences drawn from the test in the Clifton epidemic we desire in justice to that gentleman to admit that until bacteriologists are agreed the medical profession can hardly be expected to accept such tests as infallible. Notification then as a step in the prevention of an infectious disease is of service by giving the sanitary authorities some clue as to the source of infection, but it requires the concurrence of many such notifications before a general food supply can be suspected of contamination.

The isolation of the sick, the disinfection of excreta, clothing, &c., are all essential measures to prevent propagation from the individual case, and Dr. PAYNE deserves thanks for directing attention to this aspect of the question. Of these the most important is the best method of disposal of excreta. No doubt destruction by burning would be the most effectual, if it were possible. The disposal by water-closets and drains after disinfection is only safe when that disinfection is really thorough, and unfortunately this is difficult to attain. It is, however, almost the only method available in urban districts, where reliance must be placed on the integrity of the structural arrangements and channels whereby the material is carried away. It is different in rural districts, for we are distinctly of opinion that Dr. POORE made out a strong case in support of the power of the well-tilled soil to render harmless the specific contagia, whilst utilising to the best advantage the rich material of human excrement. The conditions he laid down as essential are wholly different from those which obtain in the sewage-laden soil around a leaking cesspit or the contents of a deep trench; and if only we could return to the primitive simplicity of patriarchal existence it might be possible to leave the work of purification and disinfection to the natural agencies of soil and vegetation. This, however, is impossible and we must be content even at the cost of infinite labour to do our best to remedy defects and make air and water wholesome by constant supervision and wise control. The discussion travelled over many other questions cognate to the topic of the prevention of typhoid fever, but the application of it all is the general recognition of the conditions that lead to the dissemination of the virus and the measures, individual and social, that are to be adopted to nullify these conditions and limit the diffusion of the disease.

AN inquest held on Jan. 8th upon the body of a man who died in Guy's Hospital after having been stabbed was the occasion of an important discussion between the coroner and a witness as to some points of professional etiquette. The facts were as follows. The man was stabbed on the night of Dec. 27th, 1897, was taken to the hospital on the day after, and died on Dec. 29th. On the afternoon of that day a woman gave herself up at the police-station as the aggressor and, this being the first information that the police had received of the matter, they inquired at the hospital and found the man dead. Accordingly at the inquest the point was raised as to whether or no the hospital authorities should or should not have given information to the police. The coroner was of opinion that they should and so were the jury, at all events in the case of "injuries presumably not self-inflicted." The two medical witnesses—namely, the house surgeon in charge of the case and Dr. PERRY, the medical superintendent of the hospital—deposed that the invariable custom at Guy's Hospital — and we think that they might have added at every other hospital—is not to give information to the police unless the injured party wanted someone to be arrested. Dr. PERRY gave very convincing reasons for this course of action. Cases, he said, of attempted suicide are often brought to the hospital. Suicidal attempts upon life constitute a criminal offence; consequently if it were known that anyone who had attempted suicide would be immediately reported to the police on arriving at the hospital, such an one would not be brought there at all and might very possibly die from want of attention; therefore he thought that it was better for the hospital to be known as a place where no questions were asked unless the patient himself desired someone to be arrested.

This case is only one more example of the way in which the law and the seal of professional secrecy come into conflict, for it has always been held that information obtained by a medical man in his professional capacity is to be regarded as confidential quite as much as that obtained under the seal of confession. In this instance the law seemed to require medical men to put aside their own profession and to aid another. But that the servants of the law can and do on occasion act in the same way is exemplified by what happened some years ago in Whitechapel when there was a very severe outbreak of scarlet fever. The Notification Act was not then in existence, but as the need for arriving at immediate knowledge of the occurrence of new cases was felt the police authorities were employed as sanitary inspectors and had the right of entry with the permission of the owners or tenants into lodging-houses, thieves' kitchens, and the like. They thus were able to give valuable information as to fresh cases of disease; but while thus employed as sanitary inspectors they were careful to drop their *rôle* of legal agents, and although they constantly came across men who were "wanted" in the course of these investigations such men were allowed to go free for the time being because it was rightly argued "if people get to think that our appearance is followed by arrests they will refuse any information about the fever and the whole object of our appointment will be done away with." In the same way hospital authorities argue that their mission is to save life if possible, and

therefore that nothing should be done which would in any way interfere with this the cardinal function of the institution. It is practically the remnant of the old idea of sanctuary which prompts this action and that idea is one of the oldest which affect humanity. The ancient Jews had their cities of refuge, so had every other nation with any approach to civilisation, while in later times the sanctuary at Durham was famous throughout the kingdom, and although in a hospital it is the victim who is received and not the aggressor, yet the underlying idea is the same.

With regard to the legal aspects of the case it may be asked, "Is not a medical man who conceals the fact of a crime which comes to his knowledge guilty of misprision or of being an accessory after the fact?" We are not aware that this point has ever been decided by a definite court of law, but everyone will remember the opinion of Mr. Justice HAWKINS in the case of PLAYFAIR and Wife *v.* KITSON. Sir JOHN WILLIAMS was under examination and the learned judge said to him: "Suppose a medical man were called in to attend a woman and in the course of his professional attendance he discovers that she has attempted to procure an abortion. That being a crime under the law would it be his duty to go and tell the Public Prosecutor?" Witness: "The last legal opinion upon that very point obtained by the Royal College of Physicians is 'Yes.'" Mr. Justice HAWKINS: "Then all I can say is that it will make me very chary in the selection of my medical man." This is sound sense, but we do not mean to say, nor, we think, did Mr. Justice HAWKINS mean it to be inferred, that in no case should the medical man in attendance act upon his suspicions. Let us take, for example, the case of a medical man who has reason to think that his patient is being slowly poisoned; under such circumstances it would be his duty to inform the suspected poisoner that if the patient did not improve further steps would have to be taken. Such a case has been reported,[1] and if the same thing had occurred in the celebrated PRITCHARD case one life at least might have been saved. We therefore consider that Dr. PERRY and the house surgeon acted in the only way in which they could have done either from the point of professional rectitude or that of expediency. It would be a sorry day for hospitals if it came to be known that they were in addition to their health-giving functions the portals to a criminal dock, and although the prevention, detection, and punishment of crime are matters which every good subject ought to have at heart, such are not the objects for which hospitals were founded, nor are their officers to be regarded as agents of the law.

WE think that the officers of the Army Medical Staff are to be congratulated upon the result of the late deputation to the Marquis of LANSDOWNE, the Secretary of State for War, on the subject of the Army Medical Service. In the first place the deputation, which was introduced by Dr. R. FARQUHARSON, M.P., was a distinguished one, representing as it did not only the British Medical Association but several universities and colleges of the United Kingdom. Some of the members of the deputation, referring to the present unfortunate condition of the Army Medical Service, which in their opinion called for serious consideration, urged upon the Secretary of State the necessity of meeting the views of medical officers, endorsed as they were by the medical profession, especially in the direction of the formation of an Army Medical Corps and the granting of military titles to medical officers as expressive of their army rank. As our readers are well aware, the unsatisfactory state of the medical service, its growing unpopularity and its inadequacy to meet the requirements of the army at the present time do not admit of doubt. Lord LANSDOWNE in his reply frankly accepted the situation by assuring the deputation that he was entirely with them in regarding the present condition of the Army Medical Staff with very serious concern. The fact that there was comparatively little competition for vacancies and that the best men did not present themselves pointed, he confessed, to a very grave state of things. The matter had already had, and was still having, serious consideration, and Lord LANSDOWNE claimed that during his term of office a number of matters (which he enumerated) had been dealt with and redressed to the satisfaction, he thought, of the medical profession. There is no doubt the War Minister was quite correct in this statement, and the profession in these respects quite recognises its indebtedness to the War Office authorities; but important as these concessions may be they do not really touch the main point—viz., the formation of a Royal Medical Corps and the question of a medical officer's rank and title. Lord LANSDOWNE intimated that there was no objection to the formation of such a corps, but the serious obstacle really arose in connexion with the question of rank and command, and we gather that but for this stumbling block and difficulty the amalgamation of the Medical Staff with the Medical Staff Corps and the reorganisation of the medical department into a medical corps would have taken place. Be this as it may, however, Lord LANSDOWNE seems at last to have recognised that medical officers and the medical profession make no claims whatever for anything beyond a limited command; and reading between the lines of his speech it appears to us that Lord LANSDOWNE is disposed to make this concession. Everybody admits that the present titles of medical officers are awkward and cumbersome, and Lord LANSDOWNE thought it ought not to be beyond the power of the authorities to discover more suitable designations. His lordship's concluding remarks were significant. They took the form of a very shrewd and pertinent question. He wanted to know whether, in the event of the subjects of corps and rank being disposed of satisfactorily, the War Office might rely upon receiving from the profession assistance in obtaining the best class of candidates in adequate numbers? Dr. FARQUHARSON was able, on behalf of the deputation, to give him this assurance; and if Lord LANSDOWNE'S promised announcement of his decision be as satisfactory as we now have every reason to hope it will be we are of opinion that the medical colleges and the profession generally should cordially accept it and do their best to aid him in creating and developing a large and efficient Army Medical

[1] The Profession of Medicine, p. 47. (By Charles West, M.D. London: Kegan Paul and Co. 1896.)

Service. We assume that whatever is done for officers of the British Medical Service will be also done for officers of the Indian Medical Service.

A MOST influential deputation, representing not only the Teaching Colleges, the London Medical Schools, and the Senate of the University of London, but also the various scientific and technical societies in London, such as the Royal Society, the Institution of Civil Engineers, the Institute of British Architects, &c., waited on the LORD-PRESIDENT of the Council on Monday last to urge upon him and his colleagues the necessity of their passing at the earliest possible date the Bill which was introduced last year in the House of Lords by the Government. Oxford, Cambridge, and the Victoria Universities not only showed no jealousy, but were represented by zealous supporters of a Teaching University of London. The City Corporation and the London County Council also strongly supported it. Professor MICHAEL FOSTER was very eloquent as to the influence of teaching upon research and Mr. WARREN, the President of Magdalen College, Oxford, who had recently inspected the University Colleges which are in receipt of a grant from the Treasury, spoke most strongly of the advantages he had observed in those Colleges which formed part of a University. The medical side of the question was pressed by Sir SAMUEL WILKS, President of the Royal College of Physicians of London, and by Sir WILLIAM MACCORMAC, President of the Royal College of Surgeons of England, and by Dr. F. TAYLOR, as chairman of the delegates of the medical schools. The LORD-PRESIDENT admitted over and over again the necessity of a teaching university and urged, quite truly, that it was not a political matter, as almost all were agreed upon the question. The compromise embodied in the Bill had reduced the opposition to a minimum and, as he should tell his colleagues, it would take up but little of the time of Parliament. We trust that this means that the Bill will be made a Government measure and be pushed forward early in the forthcoming session and that the long-standing reproach to the largest metropolis in the world of having no teaching university will speedily be removed. The best libraries, museums, laboratories, and clinical hospitals are at the disposal of the student, but he cannot use them for want of organisation. The complexity of the details of the question are so great that legislation by charter is impossible and nothing remains for the Government but to firmly insist on passing the Bill through the two Houses and giving a statutory commission full powers to act. In this way the rights of Convocation, the claims of external students, and the demands of London teachers can be most satisfactorily considered and adjusted.

EASTERN DISPENSARY, BATH.—The Mayor presided at the annual meeting of this institution on Jan. 20th. The annual report showed that the general working of the Dispensary had been as satisfactory as hitherto. The number of patients treated was 4340, against 4437 in 1896. 788 patients had been visited at their own homes, an increase of 165 over the previous year, and the number of visits paid to such patients was 2893 as compared with 2239 in 189 .

Annotations.

"Ne quid nimis."

PLAGUE MEASURES IN HONG-KONG.

THE recrudescence of plague in Hong-Kong recalls the attitude of this colony in relation to quarantine and the Venice Convention. When the subject was under discussion last autumn the views held in Hong-Kong were very varied and the official reports and statements on the different aspects of the question were marked by a singular departure from the rules ordinarily governing discussion of public matters. Dr. Clark, the medical officer of health, had urged that Asiatics and Africans should only be allowed to land provided they gave their names and addresses together with some guarantee that the individuals in question would remain at those addresses for a period sufficiently long to be placed under some supervision. The suggestion was described by another official as "too ridiculous" and the health officer was declared to be "absolutely ignorant of the conditions" affecting the question. The truth is that Dr. Clark advised action precisely the same as this country took as regards a less dangerous class of aliens during the Hamburg cholera epidemic. But his critics wondered what would be the result of informing the shipping companies of any such decision. We assume it would have been much the same as it was here. They protested, their protests were ignored, and they had to take back such people as could not comply with our regulations. One such experience sufficed, and pending the period of danger no one was brought to our shores who could not comply with our conditions. It is much to be deplored that our colonies cannot see the desirability of taking action on modern lines. They seem to attach importance to bills of health given in ports of departure whereas they are known to be practically valueless, and at Hong-Kong they find difficulty in following the "recommendations" of the Venice Convention because they have no quarantine station in which to "keep 500 or 600 people for ten days." The Venice Convention never recommended that 500 people amongst whom there was no disease should be kept in quarantine; hence if there were an odd case or two of plague it sanctioned the landing of all not affected provided the very conditions which were so much cavilled at in Hong-Kong were complied with. England was forty years ago in the same position as Hong-Kong now is. She could not lock up all people coming to her shores from infected ports on the coast of Europe and hence she set herself to perform a different duty—namely, to make her soil as little receptive as she could of foreign infections. We do not pretend to have achieved our end yet, but we are at least adopting measures which go to save a vast amount of life from other diseases than those that are imported, whereas resort to quarantine restrictions not only fails in this respect, but generally leaves a country worse off than ever because of the unremunerative and wasteful expenditure on quarantine restrictions. Fortunately Hong-Kong did agree last autumn to inspection of vessels and we hope such inspection will be under medical supervision, for the prevention of plague is essentially a medical task.

"A STRANGE CESSPOOL FATALITY."

UNDER this heading we commented in an annotation last week upon a case at Leicester which presented some peculiar and interesting features. Since offering the comments then published we have received further particulars which have kindly been furnished by Dr. Young, who gave evidence at the inquest upon the body of the man who

lost his life during the operation of cleansing the cesspool referred to. Dr. Young points out that the cesspool receives the hot washings of beer barrels which contain hop-leaves originally used to keep the beer in good condition. In the presence of such conditions as moisture, heat and hops in a confined space a fair amount of carbonic acid, he remarks, might be expected to be present, but he cites one or two interesting points in the case which would rather tend to disprove such a theory. 1. The lid of the manhole having been removed several hours before operations began would allow of the escape of some of the gas, he thinks, in spite of its heavy nature, if it had been present in considerable quantity. 2. Lights burned as brightly near the surface of the water all the time the men were at work as they would do in the ordinary atmosphere. 3. If carbonic acid had been present in such proportions as to destroy life, why, he asks, should Butters, who recovered consciousness and mounted the ladder unaided, not have become more and more asphyxiated and have died? 4. These two men were accustomed to this kind of work. The deceased had several times previously cleared out this chamber. What gas was present on this occasion which had not been present on former occasions? 5. Are retching and vomiting symptoms of carbonic acid poisoning as in the case of poisoning by carbon monoxide? Dr. Young is inclined to the belief that carbonic acid could not be present in any appreciable quantity from the fact that a lighted candle burned brightly in the chamber, although, as he points out, "the mere fact of a candle continuing to burn in an atmosphere is no test of its being respirable with impunity, for, as Dr. Ferrier has observed, 'a candle will burn in an atmosphere containing 10 per cent. of carbonic acid if the oxygen is present in the normal amount and the presence of an amount of carbonic oxide sufficient to cause death will not materially affect the flame. If carbonic acid reaches the proportion of 16 per cent., the candle will be extinguished, however.'" In emptying the chamber the men's faces were brought near the surface of the liquid. As long as they were merely getting rid of the water no inconvenience was felt, but when after a time they began to disturb the thicker contents a "strong smell" was perceived. Could it be, Dr. Young asks, that there was then a liberation of pent-up carbonic acid sufficient to render them unconscious? At the inquest Dr. Young expressed the opinion that though the deceased had been overpowered by some poisonous gas the immediate cause of death was suffocation from drowning. A post-mortem examination was not made. In his opinion life was not extinct when the deceased became submerged. Otherwise why, he asks, should the man Butters instead of passing into a mere comatose state have regained consciousness?

HOSPITAL REFORM.

IN recognising the progress made in the public discussion of the great subject of hospital reform it must be admitted that considerable credit is due to the Hospital Reform Association and its indefatigable honorary secretary who in the course of last year has travelled to and fro and up and down the country in the service of the association and doubtless at great personal inconvenience to himself. Mr. Garrett Horder's paper at the first general meeting, which we publish this week, shows the position and objects of the society very clearly and succinctly. The restriction in the number of cases, especially of out-patients, is the desideratum of all hospital reformers, and the report gives various suggestions for promoting this object, of which the chief are the abolition of subscribers' letters, the limitation of the new cases to be seen in one day in the out-patient department, and the bringing about a better understanding between the medical staff and the practitioners outside. Most importance is attached to the recommendation of a medical practitioner. The assumption should be that until the means of relief from private practitioners have been exhausted the necessity for hospital relief should be held not to have arisen. The patient is safeguarded from the too severe operation of this principle by the provision that every case shall be seen once and prescribed for, but not necessarily seen again as a hospital patient. Some of the great hospitals are already beginning to act on something like this principle. Undoubtedly the principle is a sound one within limits, though its application will throw a considerable responsibility on the medical profession. It will throw on medical practitioners the duty of seeing a large number of patients who can scarcely remunerate them, and will put them somewhat into the position of relieving officers. It will be well before pushing this point too far to consider details and to test the willingness of practitioners to be so used. It must be discouraging to the officers of this association to find that the very modest expenses of their arduous labours are not met so far by the membership or by subscriptions. The association is about £50 in debt. Such a state of matters must be altered if the association is to do any good work in the future. The question is in the front rank of hospital questions. Fortunately other bodies are moving in the same direction. But if the enemy of hospital reform is not to blaspheme the Association which exists for this very purpose should receive more support and generosity from the profession.

URBAN MORTALITY IN SCOTLAND IN 1897.

ABOUT 36 per cent. of the people of Scotland are resident in the eight principal towns, to which the monthly returns issued by the Scotch Registrar-General apply. The latest issue of these—that for December last—has just appeared, and an examination of the series shows that during 1897 32,824 deaths occurred in the eight towns collectively. The estimated aggregate population was 1,549,907, and consequently the general annual death-rate was 21·18 per 1000 of population. Of the 32,824 deaths 15,727 occurred in Glasgow, 6224 in Edinburgh, 3378 in Dundee, 2471 in Aberdeen, 1527 in Leith, 1466 in Paisley, 1363 in Greenock, and 668 in the "Fair City" (Perth). Looking at the estimated populations of these towns, which were respectively: Glasgow, 714,919; Edinburgh, 292,364; Dundee, 163 090; Aberdeen, 138,143; Leith, 75,186: Paisley, 74,206; Greenock, 61,475; Perth, 30,524, we find that the annual rate of mortality was, in the order of merit—that is to say, in inverse ratio to the number of deaths—Aberdeen, 17·89 per 1000 of population; Paisley, 19·76; Leith, 20·31; Greenock, 20·55; Dundee, 20·71; Edinburgh, 21·29; Perth, 21·88; and Glasgow, 21·99. As to the causes of death, 4991 deaths were due to "specific febrile or zymotic diseases," 5 to parasitic diseases, 118 to dietetic diseases, 6020 to constitutional diseases, 2194 to developmental diseases, 16,917 to "local" diseases, 1237 to violence, and 1342 to ill-defined and not specified causes—the total being, as above, 32,824. In all the months except January, November, and December, the deaths were above the average for the past ten years after allowing for increase of population, the net gross increase being 1409. To speak more particularly, 3630 of the deaths were due to miasmatic diseases, 3669 to those of the nervous system, 2751 to those of the circulatory system, 6747 to those of the respiratory system—the most fatal class of disease to which the people of Scotland are subject—and 2285 to diseases of the digestive system. With regard to zymotic diseases there were 6 deaths from small-pox, all of which occurred in Glasgow, which is by far the largest of any of the Scotch towns. The number of deaths ascribed to measles was 1105, to scarlet

fever, 340; typhus fever, 12; influenza, 264; whooping-cough, 1404; diphtheria, 205; and enteric fever, 277. The most prominent epidemics during the year were measles and whooping-cough, and owing chiefly to the prevalence of these disorders there was a most extraordinary rise in the death-rate both for Edinburgh and Leith—from 16·9 to 21·29 per 1000 of population in the former as compared with 1896, and from 16·0 to 20·31 in Leith. Scarlet fever also was particularly marked in Edinburgh in the month of August. It is interesting to note that while the death-rate in Glasgow, Edinburgh, Dundee, Leith, Paisley, Greenock, and Perth rose more or less as compared with the immediately preceding year that for Aberdeen fell fractionally, which is to the credit of Professor Matthew Hay, M.D. Edin., medical officer for the City of Aberdeen, and his staff. It is also supposed with good reason that the population of Aberdeen has been underestimated by the Registrar-General. There is "evidence *aliunde*" (as they would say in Scotland) that the annual increase of population per cent. in Aberdeen has since the Census of 1891 been greater than that of any other of the principal towns of Scotland. At all events, accepting the Registrar-General's estimate, the death-rate in Aberdeen last year was the lowest on record since the Registration Acts came into force in 1855, and approaches the ideal figure set forth by the late Sir Edwin Chadwick.

PROPORTIONAL REPRESENTATION IN ELECTIONS.

WE have received from Mr. J. W. Barrett, F.R.C.S. Eng., of Melbourne, a letter which he has addressed to the President of the Royal College of Surgeons of England. In this letter Mr. Barrett points out that elections to vacancies on the Council of the College are decided by the system of voting known as *scrutin de liste*, a method which enables a minority to return a majority of candidates. For instance, there is one vacancy for which there are three candidates, A, B, and C. There are also twelve electors. A gets 5 votes, B gets 4, and C gets 3. A is therefore elected although he has not an absolute majority, for B and C have together 7 votes to A's 5. If C had not been a candidate B might have obtained C's votes and so secured election by an absolute majority over A. Mr. Barrett is of opinion that the Hare system, which aims at reproducing in the elected body the various opinions held in the electorate at large, is the best. This method is as follows, to quote from a lecture delivered by Mr. Barrett at the Reform Club, Melbourne, last summer. The elector numbers the candidates in the order of preference that he chooses. The voting papers are then sorted and those in which any particular candidate is marked "1" are put together and the bundles of papers are counted. The number of valid papers is then divided by the number of vacancies and the result gives the average number of votes which must be obtained by any candidate to secure his return. Candidates found to have reached this quota are elected and if there are enough to fill the vacancies the matter is at an end; if not, but some candidates have received a surplus of votes, the surplus is distributed amongst those candidates marked "2." For example, says Mr. Barrett, suppose 30 electors and 10 vacancies; 18 papers are marked, Turner, 1; Berry, 2; Isaacs, 3; and so on with the rest of the candidates; while 12 are marked, Fitzgerald, 1; Gillies, 2; MacIntyre, 3; and so on. As there are ten vacancies and thirty votes the average to be obtained is three. Turner had 18 votes in all and therefore was elected with 15 votes to spare. These 15 votes were handed on to Berry, who was accordingly elected and had 12 votes to pass on. Isaacs therefore received 12 votes, was elected and had 9 votes to pass on. The same principle was carried out for the other party, Fitzgerald having received 12 votes altogether was elected and had 9 votes to pass on. So in the end six candidates were elected by 18 members of the one party and four by 12 members of the other, the number of successful candidates being in proportion to the numbers of the different parties. Mr. Barrett's lecture, now issued as a pamphlet, entitled "Proportional Representation," from which we have taken these figures, is well worth reading.

CHRONIC SYMMETRICAL ENLARGEMENT OF THE SALIVARY AND LACRYMAL GLANDS.

AMONG rare and imperfectly known diseases there are none of greater interest or more in need of further investigation than a curious malady characterised by chronic enlargement of the salivary, lacrymal, and other glands. It presents quite a new problem in pathology. In THE LANCET of March 18th, 1893, we noticed a paper on the subject by Professor Fuchs, of Vienna. He had under his care a man, aged sixty-one years, who, having had swelling of his eyelids for four months, noticed that a tumour was forming below the ear. Examination showed that the upper lids were pressed forward by tumours in the upper and outer portion of the orbits, evidently enlarged lacrymal glands, and that the parotid glands were also enlarged, forming smooth tumours. There was neither pain nor sign of inflammation. Treatment proved useless, and at the end of a year the tumours had slightly increased. A fragment excised from one of the lacrymal glands showed a structure much resembling the lymphoid tissue of trachoma; no glandular substance was found. Professor Fuchs could find only two cases in medical literature of chronic simultaneous enlargement of lacrymal and parotid glands. In one the submaxillary glands were also affected; after a year all the glands had nearly regained their normal condition. In the other all the maxillary glands as well as those of the oral mucous membrane were enlarged. THE LANCET of July 1st, 1893, contains another case published by Mr. Simeon Snell and entitled, "Simultaneous and Symmetrical Tumours of the Lacrymal and Parotid Glands." The patient was a woman, aged sixty-one years, in good health. The tumours steadily increased in size, the left orbital becoming of the size of a small teacup. It was of a bluish colour and reached to the temple and down the face. The submaxillary and sublingual glands finally became affected. The subsequent history is imperfect. The right side of the face ulcerated and a perforation into the mouth formed. Six months later and five and a-half years after the onset of the disease the patient died from exhaustion. The latest contribution to the subject is an article by Dr. Osler in the *American Journal of Medical Sciences* of January, 1898, in which he has described the following case: A coloured girl, aged eleven years, in good health, began to feel dull and heavy and her face and neck became a little swollen. When she came under observation, six weeks after the beginning of the disease, the lacrymal, parotid, submaxillary, and buccal glands were enlarged. The symmetrical enlargement of the parotid glands was a remarkable feature, causing tilting up of the lobes of the ears. There was slight general enlargement of the lymphatic glands, particularly of the posterior cervical. The spleen also was enlarged and the notch could be felt. Ulceration of the cartilage of the septum nasi, which was reported to Dr. Osler as syphilitic, occurred. Iodide of potassium and mercury were administered; all the glandular enlargements slowly diminished and had quite disappeared one and a half years after the onset of the disease. She was readmitted to hospital more than a year later with phthisis, to which she succumbed. The necropsy showed that the lacrymal

glands were replaced by fibrous tissue and that there was no trace of enlargement in the parotid glands. Dr. Osler inclines to the view that the disease was associated with inherited syphilis, which he thinks is borne out by the improvement which occurred under mercury and iodide of potassium. With all the deference due to the high position which he holds we must dissent from him emphatically. Ulceration of the cartilaginous septum nasi, even to the extent of perforation, is by no means necessarily syphilitic. In this case there is not a single fact to support such a conclusion—no interstitial keratitis, no malformations of the upper central incisors, no history personal or family in the least suggestive. On the other hand, the termination of the case favours the view that the ulcer, if not actually tuberculous, was of the kind which sometimes occurs in this position in persons of tuberculous tendencies. As to the improvement under specific treatment, in general this counts for little (for many diseases respond to mercury and to iodide of potassium) and here for nothing. The improvement was very much slower than that which occurs in syphilis. Moreover, cure has been obtained in one case under this very treatment where there was no question of syphilis. We allude to a case published in the Transactions of the Ophthalmological Society, vol. iv., by Mr. Jonathan Hutchinson.[1] It appears to be the first case of the disease on record and, strange to say, has been overlooked by all subsequent writers. In 1892, eight years afterwards, Mikulicz described the next case and claimed it as a form of disease previously unrecognised. Mr. Hutchinson's patient was a Hindoo barrister who suffered from proptosis first of one and then of the other eye in association with enlargements of the lacrymal, parotid, and cervical lymphatic glands. The proptosis was not due to enlargement of the lacrymal gland which overhung the eye and was moveable on it. Mr. Hutchinson thought that it was due to some swelling of the fibrous or fatty contents of the orbit and that the case should be placed in the same group as the diffuse lipomata of the neck. Though he had never seen any of these cases complicated with proptosis or enlargement of the lacrymal glands, in one the parotids were enlarged exactly as in the case described. That the growth is of the interstitial connective tissue of the glands, but lymphomatous and not lipomatous, subsequent observations have confirmed. Kümel found a complete substitution of the gland tissue by leucocytes. But why this peculiar distribution of the disease? An instructive and parallel fact is that mumps is sometimes, though very rarely, complicated by acute dacryo-adenitis. The general law that disease of one part tends to spread to similar structures gives some explanation of these cases.

[1] THE LANCET, July 12th, 1884.

THE MIDWIVES OF CHICAGO.

WITHIN the city of Chicago are upwards of a thousand women who practise the art of midwifery, and we read with some astonishment in a report on the subject by Dr. F. W. Reilly that until last year these women plied their occupation without let or hindrance from the State. It required, it seems, "certain peculiarly atrocious developments" in the spring of 1895 to awaken public opinion and to stimulate legislation. There was apparently a growing practice among the midwives of Chicago to prescribe medicine for those under their care and, if they deemed it necessary, to apply instruments. These tendencies led, as was to be expected, to dire results; indeed, in the report to which reference has been made we are furnished with an account of a certain midwife who, in her zeal to extract a child with the forceps, lacerated the cervix of the uterus and also the intestine. The woman died and was buried, but the facts coming to light an exhumation was ordered and a necropsy performed. The proceedings were, however, cut short by the suicide of the midwife. In another instance a midwife amputated an inverted womb in the belief that it was a "tumour." These nefarious performances led to regulations being drawn up, and the midwives are now under proper supervision.

THE ROYAL COMMISSION ON TUBERCULOSIS.

MEETINGS of this Commission were held at 7, Whitehall-place on Jan. 19th, 20th, 21st, and 22nd, the following members being present: The Right Hon. Sir Herbert Maxwell, Bart., M.P. (chairman); Sir Richard Thorne, K.C.B., F.R.S.; Sir George Brown; Mr. Shirley F. Murphy; Mr. Harcourt E. Clare; Mr. Cooke-Trench; and Mr. John Speir.

THE INFLUENCE OF THE THYROID GLAND ON METABOLISM.

THE results of three series of researches on the influence of the thyroid body on nutrition have recently appeared. These researches are calculated to modify the opinion generally entertained in regard to the value of this organ. It is usually accepted that removal of the thyroid body leads to nervo-muscular disturbances, to tremors and twitching of muscle and tetanus, and to nervous depression and stupor. It is believed, too, that a substance—iodothyrin—produced by the thyroid body possesses an antitoxic action, so that its administration as a medicine is capable of supplying the loss of the gland. The researches of Dr. H. Munk seem to show that this doctrine is untenable. It is true, indeed, that ablation of the gland is often followed by serious indisposition and by death but, on the other hand, more than 50 per cent. of monkeys and rabbits and 25 per cent. of dogs and cats remained unaffected by the operation. The thyroid body cannot therefore be regarded as an organ of extreme importance in the maintenance of life. Dr. Munk has satisfied himself that in the animals operated on no fragment of the organ was left, that there were no accessory thyroid bodies, and that no growth of other analogous organs such as the hypophysis cerebri was noticed. Moreover there were no poisonous effects observed from the products of normal metabolism acting on the nervous system. The differences noted in different instances were too numerous and too great to permit them to be referred to individual peculiarities in the formation, accumulation, and action of any special poison. Dr. Munk does not find that exposure of the animal after ablation to a low temperature favours the occurrence of tetanus or that exposure to a high temperature favours chronic cachexia without spasms. The cachexia observed occurs in consequence of disturbance of the digestive organs, insufficient exercise, and other bad effects of imprisonment; a myxœdematous cachexia with or without antecedent tetanus does not occur in animals as a consequence of the extirpation of the gland. The disturbances of the economy occasioned by the operation were neither prevented nor removed by the artificial ingestion of the thyroid body and he is unable to support the statements of Eiselberg in regard to the effects of the transplantation of the organ. He admits that removal of the thyroid body endangers life, but denies that it is essential or highly important for the preservation of life. M. Schöndorff's experiments were directed to the determination of the metabolism of albumin in the dog on a diet containing thyroid gland substance as compared with a diet free from thyroid. The nitrogen, fat, and in part the amount of glycogen in the thyroid-free diet were accurately determined. The diet consisted of meat and rice or lard. Twelve experiments were made on the same dog, each lasting for several days. When the income and expenditure had

been brought into equilibrium, five and then ten thyroid tablets were given for twenty-four days. The excretion of nitrogen first rose for a few days, then sank to the normal amount. The body weight steadily decreased throughout the whole period. This coupled with the known increase in the absorption of oxygen during the consumption of thyroid body points to the loss of fat. The increase in nitrogen loss at first, he believes, in opposition to all other experimenters, to be due to the elimination of urea and similar substances from the body. In the course of the following three weeks during which twenty tablets were given daily the dog, becoming thin, eliminated more nitrogen than it ingested. In order to prove that this excess of nitrogen elimination first occurs when the fat of the animal is greatly reduced, it was fed more freely with fat till equilibrium was reached and then supplied with thyroid substance. Transient increase of nitrogen elimination was again observed followed by diminution, indicating a retention of nitrogen in the system occurred. Still the total body weight diminished, so that there must have been consumption of fat. On the withdrawal of thyroid substance from the food the body weight immediately underwent an increase, with retention of nitrogen in the body to no inconsiderable amount, whilst it diminished again when the thyroid was given coincidently with increased metabolism of albumin. It would appear, then, that the body albumin is first attacked when the greater part of the fat has been used up. In the next experiment the dog was made to fast for thirty-eight days and during this period the elimination of nitrogen was the same as in a moderately fat dog, the excretion of nitrogen falling at first and then remaining stationary for twenty-six days, finally rising slowly. A consideration of the loss of weight of the animal led to the interesting conclusion that this was so small that in the final period of fasting not only was no fat consumed but the loss of body substance calculated from the elimination of nitrogen was greater than the observed diminution in body weight, and this could only be explained on the supposition that the animal retained water in its body. This view was supported by an examination of the body of the dog when dead, for whilst the normal water of the body amounts to 75 per cent. it was now found to be 80 per cent. The increase in the quantity of water was most remarkable in the bones, the normal being 22·24 per cent. whilst it was here 54·07 per cent.—that is, it had increased about 120 per cent. The proportion of fat in the dead animal was 1·78 per cent. It was determined separately in each organ, the brain containing the largest quantity 8·812 per cent., the blood the smallest, containing only 0·261 per cent., from which Dr. Munk concludes that at the close of the period of feeding with thyroid body the animal contained abundant fat, so that there was no reason for the body albumin to be consumed. The third series of researches were undertaken by Dr. A. Schiff, who has found as a result of feeding animals with thyroid and hypophysis cerebri substances that there is greatly increased excretion of phosphates with comparatively small increase of excretion of nitrogen, which points to increased metabolism of bone substance.

THE ARCHBISHOP OF CANTERBURY ON SUNDAY CLOSING.

AN enormous amount of good is to be effected by a curtailment of the hours of drinking short of that millennium for the teetotalers when the whole trade in alcoholic liquors shall have been destroyed. One obvious curtailment is that of the hours of the Sunday during which drink may be obtained. Practically the whole population acquiesces in the present short hours of Sunday work in public-houses. They are thought only fair to those who are employed in the trade, who need a Sunday's rest as well as other people; and they contribute unmistakably to the sobriety of the people. Those who have indulged in excessive drinking on Saturday—and they are "a numerous host"—have the chance of pulling themselves together before the Monday comes. There is a general feeling that the hours might be still further restricted with advantage. So long as no hardship is inflicted on those who depend on the public-house for their ordinary dinner and supper beer daily, Sundays included, no serious opposition would be offered even in the metropolis to more Sunday closing with discretion left to local authorities to extend the time in localities peculiarly situated. In many country towns it is probable that it would be quite feasible to close the houses altogether. As the Archbishop of Canterbury pointed out on Monday in his address to the Church of England Temperance Society at St. Andrew's Hall, Bethnal-green, investigation in many localities has shown that even the classes who use the public-house are favourable to its being closed on the Sunday, but any attempt at entire closure on Sundays in the metropolis would do great harm and would play into the publicans' hands. The time has come for intemperance to be seriously dealt with, and one of the first things to be done is to begin with really practicable reforms such as that advocated by the Archbishop.

THE ACHIEVEMENTS OF ABDOMINAL SURGERY.

WE print in another column a brief account from Mr. Treves's pen of a surgical operation that forms in a manner a fitting pendant to the interesting case under Professor Schlatter's care which we published in our columns on Jan. 15th. Professor Schlatter, it will be remembered, removed the whole of the carcinomatous stomach of an elderly woman and relieved her symptoms by his drastic act. Mr. Treves has removed the whole of the bowel of a child below the transverse colon together with the anus, and the patient made an easy recovery, while the symptoms incident to the perilous condition known as "idiopathic dilatation of the colon" disappeared as the result of the operation. Mr. Treves's case, like Professor Schlatter's, may be regarded as one where a tremendous operation was the last resource left to the surgeon, for the issue of cases of so-called idiopathic dilatation of the colon is as certainly fatal as the issue of cases of carcinoma of the intestines. That the little patient on whom Mr. Treves operated would have died without prompt surgical interference no one can doubt who reads the notes of the deplorable condition into which she had drifted. The attacks of obstruction of the bowel were growing more frequent and prolonged, the abdominal distension was extreme, no aperients could be used, and enemata had lost their effect. What was actually done and how it was done can be read in Mr. Treves's own words, the whole story forming a perfect illustration of the remarkable possibilities and resources of abdominal surgery.

CEREBRAL ABSCESS AND TUMOUR.

IN the series of Cerebral Cases of Unusual Interest and Importance which Dr. Byrom Bramwell is contributing to the *Scottish Medical and Surgical Journal* that which is described in the November number of the journal is so remarkable as to call for special attention. The patient was a man, aged forty-two years, whose previous health and family history offered no unusual features. He was in his usual health when he noticed some slight pain on the left side of his head. The next day he experienced numbness in his right hand and had some difficulty in writing. In the following night he had three severe epileptic fits, one at midnight, the next at 4 A.M., and the next at 7 A.M. The spasms were not confined to one side and when seen about

three hours after the last one he was quite conscious and able to give a detailed account of his previous health. He was suffering from severe pain and tenderness in the abdomen, which gradually passed away and was apparently the result of the severe muscular spasm which had occurred during the fits. The pulse and temperature were normal, there was no paralysis and no aphasic defect. There was no ear discharge. He was treated with bromide and iodide of potassium and chloral, with a sharp purgative. Five days later there had been no return of the convulsions, but there had been more or less headache with rather slow pulse and normal temperature. There was a numb feeling in the right arm and leg, weakness in these limbs and also on the right side of the face and some loss of sensibility, more marked in the leg. There was neither aphasia nor hemianopsia, but there was now well-marked double optic neuritis. Two days later the condition was obviously worse and there was superadded to the other symptoms some aphasic defect. At the end of another two days the paralytic and aphasic defects were still more marked, the breathing became stertorous and the patient passed into a comatose condition and died shortly afterwards—i.e., ten days after the onset of his first symptoms. At the necropsy the convolutions of the brain were found to be flattened and the sulci effaced. This was more marked on the left side than on the right. The basal membranes were quite normal and the vessel walls were healthy. On examining the surface of the left hemisphere a tumour was found, its posterior border being situated at the junction of the parietal and occipital lobes and its inner border half an inch from the middle line. It extended as a blunt wedge into the brain substance to a depth of three-quarters of an inch. At the anterior margin of the tumour was a patch of fibrous thickening in the arachnoid, in the centre of which was a small gritty body, afterwards proved to be of bony structure. On transverse section of the brain an abscess as large as a hen's egg was found in the middle of the left hemisphere situated in the centrum ovale and a little nearer the posterior than the anterior end of the brain. The contents were extremely fœtid and the wall was fairly firm, especially at one place underlying the tumour already described. The most careful search failed to reveal any origin for the cerebral abscess, every other organ in the body except the brain being apparently normal. The practical lessons which Dr. Bramwell enforces from this case are that abscess cannot be excluded by the mere fact that the usual conditions for abscess may be absent and that in every doubtful case trephining should be advised on the mere chance that an abscess may be present. He also draws particular attention to the absence of putrefactive organisms in the pus—these were elaborately searched for,—the fact that the tumour had given rise to so few and so recent symptoms, and the absence of any rise of temperature until just before the end. The presence of a nodule of bone is also curious and the severe abdominal pain and tenderness following the fits and apparently muscular in origin were unusual and perhaps apt to mislead. The case is certainly a very remarkable one and worthy of the careful record which Dr. Bramwell has given of it.

"DEATHS UNDER ANÆSTHETICS."

A MALE patient, aged forty years, suffering from renal abscess, was admitted into the Queen's Hospital, Birmingham, in August, 1897, and was operated on whilst under the influence of a mixture of ether and chloroform. It is stated that subsequently to this he suffered from an attack of bronchitis due to the ether contained in the mixture. On Dec. 31st he was again placed under an anæsthetic, chloroform being selected on account of the bronchitis which it was alleged followed the use of ether previously, and also on account of the presumed disadvantage of ether in cases of renal disease. The chloroform was administered by the "open method," six drachms being given. The patient struggled at first and then became suddenly quiet and the heart ceased to beat. The recourse to artificial respiration and a hypodermic injection of ether failed to restore him. Such are the details of the case as they reach us. It seems only too probable that the chloroform may have been presented in too great concentration at first causing struggling as it often does when given by the open method unless the greatest care is taken. The cessation of struggling probably occurred when the patient had received a fatal dose. It is very questionable indeed whether ether contained in any of the known mixtures will produce bronchitis or interfere with the kidneys. Statements are commonly made to this effect, but statistics and reliable data proving that such dangerous sequelæ occur are wanting. Bronchial catarrh in bronchitic subjects is found, although rarely; bronchitis in persons previously free from bronchial disease is very uncommon. The dangers of exposure of the patient's body and the cooling effects of wet towels employed during a prolonged operation are not always realised and ether too often has to serve as the scapegoat for these obvious causes of pulmonary and bronchial inflammation.

THE QUESTION OF HOSPITAL ABUSE.

DR. H. G. TURNEY, one of the assistant physicians to St. Thomas's Hospital, has forwarded to us a reprint of a paper published by him in the *St. Thomas's Hospital Gazette* for December, 1897. The paper is a very sensible and temperate statement of the case and Dr. Turney makes suggestions which are quite in accordance with our own views. Shortly put they are as follows. 1. A notice shall be placed in the casualty and out-patient rooms to the following effect. "Applicants for out-patient relief are informed that as it is impossible for the hospital to treat everyone who applies preference will be given to those patients who come recommended by a medical practitioner. No person to be considered a fit subject for relief unless he or she is either unable to pay a doctor's fee or is provided with a medical recommendation. 2. That a circular letter should be sent to all practitioners residing in the neighbourhood of the hospital inviting them to coöperate with the hospital in dealing with this question." Dr. Turney thinks, and we agree with him, that a general practitioner might send a patient up to the hospital for two reasons: (*a*) for an opinion and (*b*) for treatment. "In the former case the physician in charge would be expected to send a short opinion with recommendations as to treatment." This, we think, is the only weak part in the scheme, for it would throw a considerable amount of work on the shoulders of an official who has already got almost more to do than he can undertake with justice to himself or his patients. But the difficulty might be surmounted by the physician dictating his opinion and hints for treatment to a clinical clerk. The coöperation of the surrounding general practitioners is, in Dr. Turney's opinion, and not in his alone, to be most earnestly desired. In our opinion, to compare the sister profession of the Church, a hospital should be what a cathedral was meant to be and occasionally still is—namely, a centre for information, example, and instruction for the "practitioners" of the district—clerical in the one case and medical in the other. St. Thomas's Hospital certainly takes the greatest pains to avoid hospital abuse and although doubtless some cases do occur that is only to be expected in a large hospital, but as not more than nineteen new cases are seen per diem these are very thoroughly examined, which tends both to the benefit of the patients themselves as well as to that of the hospital. One of the chief difficulties connected with hospital abuse is the fact that owing to modern methods locomotion is so easy that London draws patients from all parts of the

country. A patient who can come up from Peterborough, as we have known one to do, should most certainly be refused hospital treatment other than, say, one day's medicine, but patients of this class are, we are glad to see, properly dealt with at St. Thomas's Hospital. The difficulties of the question are many, but Dr. Turney's paper is certainly a step in the direction of solving some of them and, as will be seen by a paper published in another column, the Hospital Reform Association has expressed its approval of his ideas.

THE RETIREMENT OF SIR WILLOUGHBY WADE.

THE whole medical profession will join in the regrets that are felt in Birmingham at the retirement of Sir Willoughby Wade. Our correspondent in Birmingham informs us that the health of Lady Wade occasions Sir Willoughby Wade's determination to live in Italy, and it is sincerely to be hoped that under more genial skies than ours long life may be the lot of both.

THE HEALTH OF MR. GLADSTONE.

THE most recent reports of Mr. Gladstone's condition, including an account received on Thursday morning, are of a reassuring nature. So far from there being any fresh cause for anxiety it has been a matter for congratulation that the strength and vital powers have been so well maintained in spite of the prolonged strain which constant pain involves. There has been a decided improvement in the neuralgic condition during the last few days and there have been long intervals of freedom from pain. In a man of Mr. Gladstone's age it is impossible to say at any time that there is *no* danger, but we are in a position to state that there is nothing in his health at the present moment giving particular anxiety to his friends.

THE LONDON POST-GRADUATE COURSE.

THE ninth year of study under the London Post-graduate Course will commence on Feb. 14th, when the spring term will open. There will be lectures and demonstrations at the following institutions—viz., at the Hospital for Diseases of the Skin, Blackfriars; at Bethlem Royal Hospital for Lunatics on Diseases of the Mind; at the London Throat Hospital on Diseases of the Throat, Nose, and Ear; at the Central London Sick Asylum, Cleveland-street on General Medicine and Surgery; and at the Parkes Museum on Hygiene. The fees are from £1 1*s.* to £3 3*s.* for each class and the diary is so planned that practitioners can attend all the lectures of the term. The instruction is thoroughly practical and suited to the wants of medical men engaged in practice. Particulars can be obtained from and fees paid to the secretary, Dr. Fletcher Little, 32, Harley-street, W.

A FEW representative "Blues" met in accordance with a suggestion made by Mr. Alderman Vaughan Morgan, treasurer of Christ's Hospital, on Jan. 5th, when it was resolved to call a general meeting of former scholars of the house with the object of making a thank-offering for the benefits received at Christ's Hospital, and by the permission of the treasurer this meeting will be held in the court room on Monday, Jan. 31st, at 5 P.M.

H.M. THE QUEEN has been pleased to award to Inspector-General of Hospitals and Fleets, Henry Macdonnell, C.B., R.N., the Jubilee Medal of 1897; the same honour has been awarded to Dr. W. R. Smith, Professor of Forensic Medicine in King's College, London, and to Surgeon-Major-General W. R. Rice, C.S.I., Honorary Physician to the Queen, late Surgeon-General with the Government of India.

ANNUAL REPORT FOR 1896 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

SECOND NOTICE.

IN our first notice[1] of Mr. Shirley Murphy's report we commented as fully as space permitted on that portion of it which relates to the distribution of sickness and mortality throughout the county of London in 1896, the administrative action of the London County Council as supervisors of the work of the forty-three metropolitan vestries for the improvement of the public health having been dealt with in a leading article in THE LANCET of Jan. 1st. We now propose to notice certain important matters to which Mr. Shirley Murphy directed the attention of the County Council during 1896, and which are detailed at the end of his report under the title of "Appendices." We would remark, however, in passing, that when relegated to this position even matters of grave importance to the public welfare seem to us to be less likely to attract the attention they demand than they would be if they formed part of the report itself. In reviewing Mr. Shirley Murphy's report for 1895 we drew attention to the salutary effect of that clause of the Public Health (London) Act of 1891 which provides for the payment by the County Council of half the salary of certain sanitary officers appointed or re-appointed after the passing of that Act. From the report now before us we note that by the end of 1896 as many as 42 medical officers of health and 182 sanitary inspectors had been thus appointed with the approval of the Local Government Board and had consequently secured a guarantee of reasonable permanency of office. It appears, therefore, that at the present moment all but a very few of the sanitary authorities of the metropolis are in touch with the coördinating office in Spring Gardens and are therefore subject to control so far as concerns the discharge of their responsibilities as guardians of the public health.

Of the seven appendices added to the present report, three are concerned with outbreaks of diphtheria, two contain memoranda addressed to the London County Council on the sanitary condition of metropolitan sanitary districts, and of the remainder one appendix deals with the operation of lodging-house bye-laws in the county of London, and the other with the question of shelters or homes for the accommodation of the indigent poor.

From the first appendix it appears that both in 1895 and in 1896 there had been excessive prevalence of diphtheria in the district of Camberwell as compared with that which occurred in London generally, but in the latter year the disease seemed specially to affect an area in Camberwell which is represented by a group of twelve census enumeration districts and contained a population of about 20,000 persons at the Census of 1896. Relatively to population the diphtheria attacks were more than four times as numerous in this "infected area" as they were in other parts of the metropolis. Mr. Shirley Murphy found that in this case, as in so many other recent cases, the disease showed a special tendency to attack children of school age and that there was a decrease of diphtheria in the infected area at the times of school holidays among children of that age. The conclusion therefore seems inevitable that school attendance had been instrumental in causing the spread of the disease. In the autumn of 1896 it had become apparent (says the report in the second appendix) that diphtheria was showing exceptional prevalence in Lewisham parish and that a locality situated at the northern part of that parish was particularly involved. In order to ascertain the cause of this outbreak Dr. Hamer, who conducted the inquiry for the county medical officer of health, found that in the few weeks antecedent to the August holiday several cases of throat illness had occurred among children attending a certain school. Within a fortnight after the school had reopened cases began to manifest themselves among school children, who were the first persons attacked in their respective families. Up to the middle of

[1] The first notice appeared in THE LANCET of Jan. 15th, 1898.

September the incidence of attack was mainly on the younger classes of the boys' department, whilst later the disease affected chiefly the infants' department and the girls in the national school. There was no evidence forthcoming that milk, or indeed any other condition than that of personal intercourse was responsible for the earlier cases, and Dr. Hamer's report conclusively shows that the larger prevalence in September and early October was due to disease contracted at school. The fourth appendix contains a report on the operation of bye-laws dealing with houses let in lodgings. In presenting to the County Council this report Mr. Shirley Murphy remarks that in every metropolitan district where by-laws or regulations have been given a fair trial the opinions of those best qualified to judge are strongly in favour of this method of dealing with such establishments. Any difficulty which had been anticipated in thus regulating these houses has always disappeared when the work has been seriously undertaken and a sufficient staff has been provided for the purpose. The very fact that a house has been registered and is subject to inspection has been found to be productive of good and there is no doubt that still better results would have been attained if larger use had been made of existing power to proceed directly for penalty instead of adopting the method of serving notices. This would be particularly the case when the nuisance to be abated consisted of overcrowding. In every London district Mr. Shirley Murphy urges, by-laws or regulations for lodging-houses exist, but in only a limited number of districts has any considerable effort been made to enforce them. In the fifth appendix Mr. Shirley Murphy presents a report on the important subject of "shelters," by which term is meant such premises as are designed to provide temporary lodging either free of charge or at a small outlay for persons who are homeless from some cause or other, this object being in most cases associated with an endeavour to assist the individual either directly or indirectly in obtaining employment. Before presenting to the County Council a memorandum of his own on this subject Mr. Shirley Murphy caused an inspection to be made of all the known shelters, refuges, and homes in the metropolis and the report thereupon of Dr. Young, assistant medical officer of health, is included in the appendix. Commenting on this report Mr. Shirley Murphy suggests for the consideration of the County Council the question whether these shelters should not be made subject to the Common Lodging-houses Acts already in force. Dr. Young's inspection of these places appears to show that while the accommodation in some of them was satisfactory in others it was very far from being so. In all instances Dr. Young found the shelters and homes clean at the time of his visit, but he also frequently found in the absence of any standard for the guidance of those in charge of these places want of sufficient air space for each person in the dormitories, the beds or bunks being often crowded together in close juxtaposition. Careful measurement proved that in some two-thirds of the dormitories the cubic space per head was materially less than that required in the common lodging-houses of London. With regard to opportunities for personal cleanliness the provision of wash basins was in numerous instances inadequate, and in many instances the water closets were faulty either in arrangement or in situation. While fully recognising the value of the frequently gratuitous work done in connection with these shelters, Mr. Shirley Murphy thinks that "there exists necessity for subjecting those which are found to be inadequate to regulations that shall prevent the accomodation they provide from falling below a certain minimum of efficiency." The fact that these establishments are not carried on for profit does not appear to Mr. Shirley Murphy an adequate reason for exempting them from the requirement that their dormitories shall not be overcrowded and that the opportunities for cleanliness shall be sufficient and the water-closet accommodation of a proper kind. He accordingly recommends that an application should be made to Parliament for the amendment of the present definition of the term "common lodging-house," so as to bring common shelters within the provisions of the Common Lodging Houses Acts, notwithstanding that the shelters are not hired for gain. An alternative method would be to empower sanitary authorities to regulate shelters much in the same manner as they can now regulate houses let in lodgings. The last two appendices contain reports concerning the sanitary condition of two sanitary districts within the jurisdiction of the London County Council. The reports are addressed to Mr. Shirley Murphy by Dr. Young. They appear to have been skilfully and carefully drawn up, and to show that their author not only comprehends what may reasonably be expected of an authority responsible for the local guardianship of the public health, but that he knows how to appreciate the difficulties which beset district medical officers of health in the discharge of their multitudinous functions, for he is careful to assign due credit to those officers whenever they appear to have done their best under circumstances which are often extremely discouraging.

In concluding our review of Mr. Shirley Murphy's report for 1896 we wish to congratulate him on the enormous amount of good work which he has achieved within a comparatively few years; every successive report contains additional evidence of his indomitable energy and perseverance as well as of his tact as an organiser and his ability as a sanitary reformer.

SCIENTIFIC ERROR.

THE publication of the Opus Majus of Roger Bacon is an undertaking which will appeal to persons of widely differing tastes.[1] Its author was a man of very wide culture and a remarkable product of the times in which he lived. No one who is capable of an intelligent interest in the thirteenth century of our era can be incapable of discerning in his encyclopædic work something interesting in a quite unusual degree. But it is to the student of natural science that the work is most suggestive and most useful. Indeed it would be difficult to overestimate its value from this point of view. It is not simply that it presents a singularly complete and equally attractive picture of the natural philosophy of the middle ages. It is not only that it forms an indispensable chapter in the history of the development of natural science. It is not, of course, that it can restore any forgotten facts of scientific value to our intellectual possessions. The main interest in Roger Bacon's work when full justice has been done to his great learning, his vigorous mind and his rare faculty of expression, will still centre upon his mistakes. These far better than his more successful achievements will repay study at the present day. For knowledge grows but mistakes recur. The discoveries of his day are the platitudes of ours, which it requires a powerful imagination to appraise at their intrinsic worth. But the sources of error in the thirteenth century are the thinker's perils still, and there can hardly be a better mental gymnastic than the tracing of them out by the light of the refutation which this acute philosopher unwittingly affords. The process is easier, much more secure, and therefore more instructive than the discussion of a modern author, because in this case there is no room for difference of opinion. Bacon's errors do not captivate us. We entertain no doubt at all as to whether the eye emits a visual beam or whether the celestial spheres fit into one another without vacuous interspaces. In following out the argument to ascertain where the weak spot may be we are troubled with no misgivings as to the validity of the conclusion. The work of criticism can proceed in leisurely fashion. It is like operating upon a patient under the influence of an anæsthetic as compared with the flurry and commotion of an operation performed amid shrieks, and groans, and strugglings. To the serious student such a discipline as the careful reading of this book affords is from this point of view invaluable.

But it is not only as a museum of dissected errors that Roger Bacon's book is of commanding interest, it is interesting also, and in a high degree, for the striking, even startling, illustrations which it affords of the venial and innocuous character of much, perhaps most, of the error into which a mind is liable to lapse that has been trained to scientific working. The age in which Roger Bacon lived produced abundant examples of the luxuriance of human error. The dangers of excessive subtlety, the madness begotten of the habit of juggling with words, have never received more appalling illustration than at the hands of some of Roger Bacon's contemporaries and immediate

[1] The "Opus Majus" of Roger Bacon. Edited, with Introduction and Analytical Table, by John Henry Bridges, Fellow of the Royal College of Physicians, some time Fellow of Oriel College. In two volumes. Oxford: The Clarendon Press. 1897.

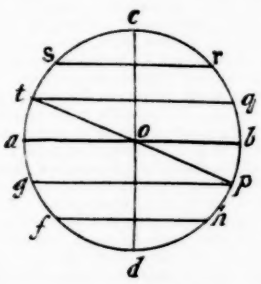
successors. But in his sober and earnest mind error itself pursues the evanescent form of truth and wanders with a faltering step or else not far away from the object of its quest. This homing instinct of the healthy human mind is doubtless one of the most precious though perhaps one of the least demonstrable of nature's gifts to man. In these pages it can be traced with ease and certainty and to him who will take the trouble to trace it here Roger Bacon's work will shine out with the glow and flash of a poem. Read in this way the book becomes one of the most delightful and the most instructive additions to the modern library. We propose to cite a few examples to make this statement good.

A very striking instance of our author's errors and one that illustrates both his weakness and his strength occurs in his discourse upon applied mathematics, the question under discussion being — How does a balanced beam regain the horizontal position after having been displaced by the depression of one end? Bacon was quite aware that if a heavy body were moved towards the centre of the earth it would gain in weight and contrariwise if it were removed to an increased distance from the earth's centre it would lose in weight—a phenomenon which we are able now to explain by the law of variation of the force of gravity. Premising the fact that weight does vary as the heavy body nears the earth or removes to a distance from it he is naturally led to the inference that if one end of a balanced beam be depressed that end will become heavier than before. At the same time the opposite end, being raised, will lose weight and consequently the balanced weights will be in equipoise no longer, but the lower will preponderate. Why, then, should it ever rise again? If the lower end of the beam preponderates how can the higher end prevail and raise it into the horizontal position?

The real answer to this question is simple in the extreme. A balanced beam that has this power of recovery if displaced is and must be a beam suspended like a pendulum from a point above its centre of gravity. The resemblance to the pendulum is not striking in a superficial sense. The great mass of the beam is distributed horizontally on either side of the point of suspension instead of being placed vertically below it. But this is an immaterial detail of shape. The beam is a true pendulum although a very short one, and recovers its position from precisely the same cause which makes the pendulum hang vertical—namely, that its centre of gravity is lower in that position than in any other. Now these facts were just as easily discoverable by Roger Bacon as by us. He must have known that a beam, however thin—say a plank for example—cannot be balanced upon a point upon its under side. The equilibrium is too unstable and, once disturbed, the beam tends not to return to the lost horizontal position but to fall over towards the depressed side. Had our philosopher followed up this clue he could hardly have failed to arrive at the true explanation. His error of observation here is unworthy of his great reputation as a naturalist. Probably if the truth were known it would be found that, like other writers who have written upon an encyclopædic scale, he often wrote without deliberation and theorised upon data which he knew to be imperfect.

But whatever deficiencies can be charged upon his method of ascertaining the facts it is difficult to put limits upon the admiration which his method of dealing with them when ascertained is calculated to extort. It is hardly necessary to premise that he lived long before the invention of the differential calculus; but his solution of the problem of the return of the balanced beam to the horizontal position affords an extremely interesting illustration of the doctrine of limiting values. That he should have committed an error in applying the doctrine is nothing. The genius of Newton was required to elaborate that doctrine 400 years afterwards. It is astonishing that Bacon should have had a clear conception of it, should have felt its probative force, and should have ventured to apply it to the solution of a problem in applied mathematics.

He uses the following diagram in which it is to be understood that the two arcs on either side of the diameter are equal so that the eight segments of the circle formed by the four parallels are all equal arcs. Now Bacon premises, quite correctly, that if a heavy body describes two of these arcs, say the two above the diameter on the right or the left hand side of the diagram, it will develop more of the energy due to gravity in the lower arc than in the upper, because its path in the lower arc will be more perpendicular and as a consequence the perpendicular travel of the falling body will be greater in the lower arc. Now, suppose the balanced beam to be displaced into the position shown by the diameter *t-p*. If the weight situated at *t* descends through the arc *t-a* it will fall through a greater perpendicular distance than will the weight situated at *p* if it descends through the equal arc *p-h*. "Therefore it follows," says he, "that for this reason it will for this purpose be less heavy." The argument from the energy of falling to the determination of the body's weight involves what must to Bacon's contemporaries have been a very startling transition. But it was in principle sound although it needed the discovery of the differential calculus before that principle could be safely applied to the solution of such a problem as Bacon was



attacking. In fact he was wrong, as we now know, but he was all but right. If the paths of his falling bodies had been straight lines instead of curves his demonstration would have been perfectly sound and highly scientific. The error was such as only a man of genius could fall into and such as no man in the then state of mathematical knowledge could escape however transcendent his genius might have been, a striking illustration that even in such matters it is sometimes true that "the race is not to the swift nor the battle to the strong."

In the foregoing instance the error though venial was of a malignant type for it tended to deepen the misconception of the facts in which it had taken its rise. We may turn next to one which, even more conspicuous to the casual reader of the book, is, on the other hand, of a benignant type which does not tend at all to obscure the facts, and it is with facts that the student of nature is most of all concerned. The mistake to which we now refer occurs in Bacon's account of the function of the eye in seeing. In the second chapter of the "Perspectiva" he remarks that among the wise it has always been considered doubtful whether vision was due to the action upon the eye of an emanation from the visible object which he calls its "species" or to the action upon the object of a ray or force issuing from the eye. Bacon enters into the discussion at considerable length and on several occasions, and comes confidently to the conclusion that a visual ray emitted by the eye is one at least of the indispensable instruments of vision. For this conclusion he assigns many reasons, of which perhaps the most notable is one that he quotes from Tideus (vol. ii., p. 50), who is credited with the remark that the eye would be quite unable to take cognisance of the distance between itself and a visible object or of the magnitude and position of the object unless it threw out rays which, falling upon the object, should cover its surface and touch its extremities. It is easy for us at the present day to tax Bacon, as his editor does in a footnote upon p. 66, with fanciful theorising in reference to this matter, since we now know that a complete theory of vision can be constructed taking due account of all that relates to the position and magnitude of the visible object without in any way postulating a "visual ray." But that is only because we are now acquainted with the mechanical arrangements of the eye which confer upon it the power of accommodation of which arrangements and the faculty which they subserve Roger Bacon and his contemporaries had no knowledge. The points to which he drew attention and upon which he based his theory of the activity of the eye in the act of vision are quite truly points which a purely optical theory of vision would leave unexplained. It is quite true that if the eye were purely passive like the focussing screen of a photographic camera we should have no data from which to form judgments as to the distance or magnitude of visible objects. We now know that the judgments are based upon the consciousness of the muscular efforts required to bring the eye into a condition of accommodation, that is to say duly

directed towards the object and focussed upon it. In Bacon's theory the effort to project a visual ray takes the place of the effort at accommodation in the modern theory of vision and the visual ray theory, although incorrect, was distinctly better than no theory at all, that is to say better than the view that the eye is purely passive in the act of vision. The "visual ray" was truly a figment of the imagination and one destined to be superseded when fuller knowledge made the matter clear. But it was to be replaced, not simply abolished like an exploded myth and until the more accurate knowledge came it served the useful purpose of preserving from oblivion and neglect some of the most important and interesting phenomena of vision. This is why we have spoken of it as a benignant error. Being an error it gave an incorrect explanation of the facts, yet even so it kept the facts in mind and classified them and in both these respects it contributed to real and material knowledge.

These specimens must suffice to illustrate the quality of Roger Bacon's work. It abounds with points which will repay study and study the more interesting because it must be entered upon with a discriminating mind. At one point the correctness of his anatomy will awaken deserved admiration and surprise, at another the boldness and felicity of his speculations, at a third some instructive error will attract attention and so the work varies not only in degree but also in kind of interest from page to page. But in one form or another the interest is never wanting and there are few libraries that might not be rendered the more complete by the addition of Dr. Bridges's two volumes.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE sixth meeting of the Royal Commissioners was held in the Moses Room of the House of Lords on Monday, Jan. 24th. All the Commissioners were present. The County Council were represented by Mr. Balfour Browne, Q.C., and the water companies were represented as usual by counsel.

On behalf of the London County Council Mr. BALFOUR BROWNE rose to say that the Council had no wish to "make a case." They were represented at the Commission in answer to an invitation they had received in order to give any help they could with regard to the inquiry. On their behalf he should be glad to have any directions from the committee as to what information they wanted; for example, with regard to the purchase of provincial water companies by the corporation he wished to know whether the Commissioners desired to have particulars with regard to these cases. It would be difficult to ensure the presence of the officials who had negotiated the transference of the water businesses to the various corporations. He therefore asked whether the Commissioners cared to receive the evidence which had been collected by an officer of the County Council with reference to the subject.

The CHAIRMAN pointed out that this would be second-hand evidence, a fact admitted by Mr. Balfour Browne, who stated that the proposed witness had done his best to get accurate information.

On behalf of the water companies Mr. PEMBER said that they would have no objection to this evidence if they had an opportunity of testing its accuracy.

With regard to the evidence which had already been tendered by the officers of the London County Council Mr. BALFOUR BROWNE said that many things had happened since Lord Balfour's Commission had made their report and that he was aware that the Commissioners had resolved not to go behind the report.

The CHAIRMAN said that Sir Alexander Binnie had given some evidence which did go behind the report.

Sir ALEXANDER BINNIE gave the Commissioners a copy of the by-laws in force at Bradford and added some statistics with regard to the daily amount of water supplied per head. At the present time it is 17·5 gallons; but in many cases does not exceed 5·7 gallons per head. This is, however, in the outlying parts of the town where the dry closet system is in force. After taking over the water-supply the corporation adopted means for checking any waste of water. Meters were fixed to the chief mains and the amount of water passing through was measured every hour of the day. When a large quantity passed between 1 and 3 A.M. it was considered that waste was taking place and the pipes were overhauled. Again, if it was found that a large quantity was passing through the mains to any particular consumer an officer of the corporation called and made inquiries as to the water-fittings.

Major-General SCOTT pointed out that meters were largely used by some of the metropolitan water companies and particularly by the East London and the Southwark and Vauxhall Companies.

Sir ALEXANDER BINNIE was unable to state what proportion of pipes in the metropolitan area were placed at an insufficient depth below the surface of the ground. He, however, tendered a schedule which contained an account of all the pipes belonging to the Southwark and Vauxhall and the Lambeth Companies which had burst during the last severe frost.

Evidence was given as to the daily over-draught taken by the Southwark and Vauxhall Company as follows. In 1892 it was on an average 3·6 million gallons; in 1893 4·5 million gallons; in 1894 4·9 million gallons; in 1895 8·9 million gallons; and in 1896 7·5 million gallons daily. A table was handed in showing the average estimated maximum supply of the New River Company from 1895 to 1915, as given before Sir Joseph Pease's Committee. The table is as follows:—

Year.	Average daily supply throughout the year.	Average number of supplies during the year.	Average daily quantity per supply throughout the year.	Estimated average population supplied during the year.	Average daily quantity per head throughout the year.	Average daily supply during the month of maximum consumption.	Average daily supply during the week of maximum consumption.
	Gallons.		Galls.		Galls.	Gallons.	Gallons.
1895	38,115,885	158,789	240·0	1,151,000	33·1	43,121,000	45,274,642
1901	47,236,000	—	—	—	—	53,438,000	56,107,000
1906	56,481,000	—	—	—	—	63,899,000	67,089,000
1911	67,538,000	—	—	—	—	76,406,000	80,221,000
1915	77,921,000	—	—	—	—	88,153,000	92,564,000

The witness also put in a table showing the probable future requirements for the year 1931:—

Name of company.	Average daily supply in 1891. (R.C. par. 31, col. 5.)	Daily average quantity required in the immediate future.	Daily average quantity required in 1931.	*Supply required per day in 1931, as stated by the Companies before the Royal Commission.*
1	2	3	4	5
	Gallons.	Gallons.	Gallons.	*Gallons.*
Southwark & Vauxhall	24,373,348	(1911) 45,352,360	63,362,840	*30,386,425*
Lambeth ...	20,234,560	(1896) 22,793,389	52,458,000	*28,411,025*
Kent.....	12,530,871	(1896) 14,970,206	51,993,100	*27,000,000*
East London	39,704,601	(Average 1894-6) 43,228,828	78,396,790	*46,000,000*
New River ...	32,640,976	(1915) 77,921,000	139,183,000	*47,250,000*
West Middlesex	15,419,907	(1901) 24,466,000	97,724,000	*26,857,250*
Grand Junction.	16,701,734	(1901) 22,410,000	54,133,000	*24,500,000*
Chelsea	9,557,388	1896) 11,720,472	17,256,960	*13,125,000*
—	171,163,385	—	564,507,690	*253,529,686*

Sir ALEXANDER BINNIE also gave a table showing the amount supplied per head in various American cities. According to these statistics the daily rate per head in Buffalo is no less than 325·8 gallons; in Chicago 190·7 gallons; in New York 103·9 gallons; and in Toronto 100·3 gallons.

With regard to the large amount of water used in American

cities Major-General SCOTT said that in America pipes were practically allowed to run all day.

Sir ALEXANDER BINNIE said that he estimated the amount which would be required per head in London daily at from 35 to 40 gallons. This included the amount supplied to drinking fountains. It did not, however, include the fountains in Trafalgar-square which had a separate source of supply. He did not think the cost of connecting the mains of the different companies would be very great. The witness stated that the mains of the East London and New River communicated with one another.

In answer to Mr. CRIPPS, Q.C., Sir ALEXANDER BINNIE stated that he knew that the Thames Commissioners now had control of the entire watershed of the river and that they had made regulations with regard to the sanitary arrangements on river boats. He had no complaint as to inefficiency to make with regard to the Thames Conservancy Board; he thought they were doing their work well. In answer to General SCOTT the witness said that he thought a certain amount of risk was run in taking so much water from the Thames and Lee, which were both polluted rivers. He stated that the Charlton well had been given up by the Kent Company because it was situated in a polluted area.

Major-General SCOTT asked the witness whether in view of the difficulties which the water companies had it would not be best to leave them with their own statutory liabilities and the witness said this view had not occurred to him. He summed up the advantages to the consumer of placing the water-supply of London in the hands of a representative body as follows: "1. It would put an end once and for all to the continued inquiries in the London water question, which have been going on since 1811, carried out by Royal Commissions and by Parliament; at the same time it would carry out the recommendations of the Duke of Richmond's Commission, Sir William Harcourt's Commission, Sir Matthew White Ridley's Committee in 1891, and the recommendations contained in the report of Sir Joseph Pease's Committee in 1896. 2. It would place London in a similar position to that which it has been found most expedient to adopt in almost all other large towns in Great Britain and Ireland and which has been found most conducive to the public interest in the United States of America, and it is a duty which the Government of India places in the hands of almost all the municipal bodies in their Indian empire. 3. That according to all authorities on the subject, Lord Balfour's Commission, the recent evidence of the water companies, and the investigations of the County Council, the present water-supply of London must be more than doubled within the next thirty or forty years and it is expedient that these new works should be carried out by some public body and not by commercial companies. The supply of water from the present sources may be taken for the year 1896 at 198,000,000 gallons a day. This cost in capital expenditure £16,531,346 or at the rate of £83,492 per 1,000,000 gallons supplied per day. Had these works been carried out by the Metropolitan Board of Works and the County Council they would no doubt have been treated as the main drainage expenditure of the metropolis has been treated, especially when we regard the long period over which the expenditure has ranged. In the case of the main drainage works since 1855 about seven and three-quarter millions of capital has been expended, of which three and a half millions has been paid off, so that at the present time the main drainage debt stands at only about £4 200,000. Under the above circumstances it is expedient that the large expenditure which is inevitable in the future should be placed in the hands of a public body rather than in the hands of commercial companies."

The next meeting of the Commissioners will take place on Monday, Jan. 31st.

THE WATER QUESTION AT CHARD.—The Chard Town Council having proposed to make trials for water upon land which they have agreed to purchase at Combe St. Nicholas, and close to the spring which supplies that village with water, the Combe Parish Council has intimated to the Chard Authority that the surface of the ground for a considerable distance around the spring is saturated with animal excrement, and if the ground is broken up it is most likely the spring will be affected thereby and a serious epidemic break out in the village.

THE SCANDAL AT THE DARENTH IMBECILE ASYLUM.

THE General Purposes Committee of the Metropolitan Asylums Board have had before them during the week the report of a Special Committee deputed to inquire into the circumstances attendant upon the death at the end of November last of an inmate of the Darenth Imbecile Asylum named Martha Dickens.

The following constituted the special committee: Mr. R. M. Hensley (chairman), Sir Edwin Galsworthy, chairman of the Metropolitan Asylums Board; Mr. J. Hardcastle, Mr. J. Hunt, Mr. J. R. Hill, M.R.C.S. Eng., L.R.C.P. Lond., Mr. A. C. Scovell, and Dr. W. R. Smith. They examined Mr. A. T. O. White, the acting medical superintendent of the asylum; Dr. W. L. Andriezen, the assistant medical superintendent; Mr. H. A. Good, in temporary medical employment at the asylum; Mr. Stamford Felce, the chairman of the Darenth Committee; Dr. A. H. N. Lewers, obstetric physician to the London Hospital; and Mr. T. Duncombe Mann, the secretary to the Metropolitan Asylums Board. The Special Committee did not take into consideration the revolting circumstances of the pregnancy which led to Martha Dickens's death, though it is well known to the public that before her death she had charged a late attendant at the asylum with the paternity. Their report dealt only with the circumstances relating to the unfortunate woman's confinement and subsequent death and ran as follows:—

"1. Inasmuch as Dr. White, the acting medical superintendent, has had no obstetrical experience since his student days, prior to 1882, we think that he was very unwise in undertaking what was likely to prove a difficult case. We do not find that he ever expressed unwillingness or made any protest. He, however, states that in conversation with members of the committee (whose names he cannot give) he suggested in the interests of the institution that the woman should be sent away for her confinement.

"2. Although Dr. White became aware of the pregnancy on July 22nd we find no entry in the case book until after her death, Nov. 30th. Neither bed-card nor written instructions as to the conduct of the case from day to day exist. In fact, there is a total absence of records.

"3. We do not find any report of the pregnancy among the acting medical superintendent's written reports to the committee.

"4. We do not find that any qualified or experienced nurse was provided to attend the case or that any application was made to the committee by Dr. White for the employment of such a person.

"5. We find that no communication was made to the coroner. Though not legally obligatory, this would, we think, have been prudent under the special circumstances.

"6. There was no post-mortem examination."

To this they add that—

"Dr. White and his assistants appear to have spared no pains and neglected no attention suggested by their experience for the welfare of the patient during her confinement, but we consider the above-mentioned errors of judgment and omissions of duty so serious on the part of Dr. White that we feel bound to recommend the immediate termination of his engagement.

"Although there is no report by the acting medical superintendent on the subject of the pregnancy the Darenth Committee were aware of the facts, for in their report of Dec. 13th, 1897, they state that the clerk to the board and the chairman of the committee made minute inquiries into the facts and a special meeting of the committee thereon was held on Aug. 12th, 1897.

"The Darenth Committee do not appear to have taken into consideration Dr. White's want of experience in confinement cases and it does not appear to have occurred to them to provide a qualified or experienced nurse notwithstanding that the occurrence of a birth in an asylum of this character is so unexpected and exceptional as to be quite unprovided for.

"The Darenth Committee in the same report give the substance of the first portion of the reply of the Commissioners in Lunacy of Aug. 25th on this case, but omit any mention of the latter portion of the same letter animadverting on the administration of the asylum.

"We consider that in failing to apprehend the gravity of the situation and in neglecting to make proper arrangements for the case by securing experienced medical and nursing attendance, and in omitting to report to this Board the full contents of the letter of the Commissioners in Lunacy, the Darenth Committee have failed to discharge as they ought the duties entrusted to them."

The Special Committee conclude their report by approving of the action of a sub-committee previously appointed in obtaining the expert assistance of Dr. Lewers, and by recommending that the Managers of the Metropolitan Asylums Board should call for the resignation of the acting medical superintendent.

The report will be fully debated by the Board next Saturday, until after which debate it will be well that judgment should be suspended. But a circumstance which has come to our ears upon good authority should be put on record at once. Although Mr. White did not write out the

facts of the case as a report, he mentioned them to the committee, so that he cannot be accused of any attempts at concealment. This does not sufficiently clearly appear in the Special Committee's report.

THE BATTLE OF THE CLUBS.[1]

THE BRITISH MEDICAL ASSOCIATION AND THE BECKENHAM AND PENGE MEDICAL SOCIETY.

THE Beckenham and Penge Medical Society have, at a full meeting, unanimously decided to send to the Council of the British Medical Association the following petition:—

We, the members of the Beckenham and Penge Medical Society assembled in formal meeting, do humbly petition your honourable Council as follows: That having regard to the difficulties attending the working of the medical departments of Sick Benefit societies, which have recently become acute in many districts throughout the country, your honourable Council do appoint a commission with authority to hear evidence and examine witnesses so that a definite plan may be arrived at whereby such societies can receive medical attendance, which, without pressing too hardly on the working class, should provide an honourable position and a sufficient remuneration to the medical officer. Your petitioners feel that your Council has such far-reaching weight and influence that recommendations issued by them after such careful inquiry would be accepted by the profession as a solution of the problem.

And your petitioners do ever pray.

Signed on behalf of the Society { F. STURGES, President, H. PRANGLEY, Vice-President, PRIMROSE WELLS, Hon. Sec.

THE INAUGURATION OF THE ESSEX SUBURBAN MUTUAL MEDICAL PROTECTION SOCIETY.

A largely attended meeting of medical practitioners was held at the Congregational school-rooms, East Ham, on Tuesday, Jan. 25th, to consider what steps should be taken to prevent abuse of medical charities in suburban Essex. Dr. F. J. Smith presided and the meeting was addressed by him, Mr. A. W. Beaumont, medical officer of health of East Ham, Dr. Harry Campbell, Dr. Butler-Hogan, and others. The work of the Provisional Committee was endorsed and it was unanimously resolved to form the Suburban Essex Mutual Medical Protection Society and to call a meeting of all registered medical men practising in suburban Essex at Stratford on Tuesday, Feb. 8th, to draw up rules and combine for the suppression of abuse of medical charities in the district and the promotion of professional amity. Only twenty-four hours' notice was given and fifty-five practitioners attended.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6679 births and 4440 deaths were registered during the week ending Jan. 22nd. The annual rate of mortality in these towns, which had declined in the three preceding weeks from 24·9 to 20·6 per 1000, was again 20·6 last week. In London the rate was 23·4 per 1000, while it averaged 16·8 in the thirty-two provincial towns. The lowest rates in these towns were 10·6 in Birkenhead, 13·5 in Cardiff, 14·8 in Swansea, and 15·1 in Croydon; the highest rates were 21·1 in Birmingham, 21·9 in Wolverhampton, 22·0 in Preston, and 22·8 in Liverpool. The 4440 deaths included 521 which were referred to the principal zymotic diseases, against 547 and 525 in the two preceding weeks; of these, 228 resulted from measles, 134 from whooping-cough, 55 from diphtheria, 42 from "fever" (principally enteric), 39 from scarlet fever, and 23 from diarrhœa. The lowest death-rates from these diseases were recorded in Portsmouth, Norwich, Bolton, and Preston, and the highest rates in Salford, Halifax, Gateshead, and Blackburn. The greatest mortality from measles occurred in Brighton, Swansea, Oldham, Blackburn, Halifax, and Sheffield; from scarlet fever in Sunderland and in Wolverhampton; from whooping-cough in Liverpool, Leeds, and Gateshead; and from "fever" in Salford and Halifax. The 55 deaths from diphtheria included 33 in London, 7 in Leeds, and 3 in Cardiff. No fatal case of small-pox was registered during the week under notice, either in London or in any other of the thirty-three large towns, and no small-pox patients were under treatment in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 3149, against 3572, 3450, and 3253, on the three preceding Saturdays; 248 new cases were admitted during the week, against 273, 239, and 215 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 533 and 516 in the two preceding weeks, rose again last week to 567, but were 144 below the corrected average. The causes of 60, or 1·4 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Nottingham, Salford, Leeds, Newcastle-upon-Tyne, and in thirteen other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Liverpool, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 24·3 and 20·4 per 1000 in the two preceding weeks, further declined to 19·0 during the week ending Jan. 22nd, and was 1·6 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·6 in Leith and 16·0 in Edinburgh to 23·8 in Perth and 27·0 in Aberdeen. The 572 deaths in these towns included 21 from whooping-cough, 15 from diarrhœa, 11 from measles, 9 from scarlet fever, 5 from diphtheria, and 3 from "fever." In all, 64 deaths resulted from these principal zymotic diseases, against 76 and 57 in the two preceding weeks. These 64 deaths were equal to an annual rate of 2·2 per 1000, which was slightly below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had declined from 27 to 11 in the three preceding weeks, rose again to 21 last week, of which 12 occurred in Glasgow, 4 in Greenock, and 3 in Dundee. The 11 deaths from measles showed a decline of 4 from the number in the preceding week, and included 10 in Glasgow. The fatal cases of scarlet fever, which had been 8, 14, and 7 in the three preceding weeks, rose again to 9 last week, of which 3 occurred in Edinburgh, 2 in Dundee, and 2 in Greenock. The deaths from diphtheria, which had been 9 and 2 in the two preceding weeks, rose to 5 last week, and included 2 in Greenock. The 3 fatal cases of "fever" were all recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 177 and 158 in the two preceding weeks, further fell to 139 last week, and were 23 below the number in the corresponding period of last year. The causes of 30, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 31·0 and 31·9 per 1000 in the two preceding weeks, further rose to 33·0 during the week ending Jan. 22nd. During the past three weeks of the current quarter the death-rate in the city has averaged 31·9 per 1000, the rate during the same period being 23·1 in London and 20·2 in Edinburgh. The 221 deaths registered in Dublin during the week under notice showed an increase of 8 upon the number in the preceding week, and included 21 which were referred to the principal zymotic diseases, against 18 and 12 in the two preceding weeks; of these, 8 resulted from "fever," 6 from diphtheria, 3 from diarrhœa, 2 from scarlet fever, and 2 from whooping-cough. These 21 deaths were equal to an annual rate of 3·1 per 1000, the zymotic death-rate during the same period being 3·1 in London and 1·1 in Edinburgh. The deaths referred to different forms of "fever," which had been 6 and 2 in the two preceding weeks, rose again to 8 last week. The 6 fatal cases of diphtheria showed a further increase upon recent weekly numbers, and exceeded those recorded in any week for some years past. The deaths from scarlet fever, which had been 5 and 3 in the two preceding weeks, further declined to 2 last week. The 221 deaths in Dublin last week included 31 of infants under one year of age and 60 of persons aged upwards of sixty years; the deaths both of infants and of elderly

[1] A reprint of the previous articles on the above subject has been published in book form entitled, "The Battle of the Clubs," and can be obtained from THE LANCET Office, price 1s.

persons showed a slight decline from the numbers recorded in the preceding week. Six inquest cases and 6 deaths from violence were registered; and 83, or more than a third, of the deaths occurred in public institutions. The causes of 15, or nearly 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

NAVAL MEDICAL SERVICE.

STAFF-SURGEON HOWARD JAMES MCCHLEARY TODD has been promoted to the rank of Fleet-Surgeon in Her Majesty's Fleet. Staff-Surgeon Myles O'Connell McSwiny has also been promoted to the same rank.

ARMY MEDICAL STAFF.

Surgeon-Lieutenant-Colonel William A. May to be Brigade-Surgeon-Lieutenant-Colonel, vice A. L. Brown, retired. Surgeon-Major Henry E. W. Barrington retires on retired pay.

Surgeon-Major Wyatt assumes medical charge of the Station Hospital and troops at Newbridge. Surgeon-Lieutenant E. W. W. Cochrane is held in readiness to embark for India about the end of February or the beginning of March. Surgeon-Captain Cockerill has proceeded to the Station Hospital, Canterbury, for duty, and Surgeon-Major Webb has proceeded from Devonport to Exeter.

INDIA AND THE INDIAN MEDICAL SERVICES.

Surgeon-Lieutenant Perry has assumed charge of the Civil Medical duties of the Dera Ghazi Khan District, relieving Surgeon-Captain Graves.

VOLUNTEER CORPS.

Rifle: 1st (Hertfordshire) Volunteer Battalion the Bedfordshire Regiment: Surgeon-Lieutenant R. Odell to be Surgeon-Captain. 2nd Volunteer Battalion the Royal Scots Fusiliers: Surgeon-Lieutenant-Colonel R. Girvan resigns his commission; also is permitted to retain his rank and to continue to wear the uniform of the battalion on his retirement. 6th Volunteer Battalion the Gordon Highlanders: Surgeon-Major R. S. Turner, M.D., to be Surgeon-Lieutenant-Colonel.

THE HEALTH OF THE RUSSIAN NAVY.

According to the most recent annual report the average strength of the Russian Navy in 1893 was 28,003 men. Among them 20,717 cases of sickness were treated and 338 deaths took place, equal respectively to 739·8 and 12·07 per 1000. The principal diseases are shown in the following table:—

Diseases.	Per 1000 of strength.		
	Admitted.	Died.	Invalided.
Venereal affections	143·4	0·03	—
Diseases of the digestive apparatus	141·0	0·46	2·74
,, ,, respiratory system	72·8	0·67	6·42
Accidents &c.	49·7	0·14	—
Influenza	37·6	—	—
Intermittent fevers	35·8	—	—
Diseases of the eyes	33·2	—	0·67
,, ,, ears	16·1	0·07	—
Scurvy	9·2	0·03	0·10
"Typhic" affections	5·8	0·71	—
Pneumonia	4·0	0·46	0·10
Tuberculosis	3·2	2·07	1·39
Cholera	0·3	0·14	—

Generally speaking this return may be said to be a record of progress, but in some respects the sanitary condition of the Russian Navy still leaves much to be desired. The affections classed as "typhic" consisted mainly of enteric fever, the balance including two cases of spotted typhus fever, one of recurrent fever, and twelve of an ill-defined disorder presenting vague febrile signs. In all the fatal "typhic" cases the respiratory apparatus became involved for the most part in the form of capillary bronchitis. Although paludal disease is still a formidable item in the list its character is steadily improving. As a rule only six or seven days' loss of service resulted from its attacks. In some districts the poison has completely disappeared. The Caspian flotilla supplied 1515 cases of ague in 1890, whereas in the year under report there were barely 200. Amongst the civil population cholera in 1893 caused great damage, but the men of the navy not only afloat but ashore almost entirely escaped. Their barracks and ships were disinfected and ventilated, the closets were thoroughly cleansed, iron bedsteads were issued in place of the old foul cots, as long as the epidemic lasted the sailors received extra rations of superior quality, their drinking water was carefully passed through Pasteur-Chamberland filters and tempered with citric acid or red wine, all ordinary taps were closed and sealed, three times daily hot tea was served out, every man was compelled to wear a flannel belt, and all fatiguing duty was as far as possible interdicted. The result of these precautions showed itself in almost perfect immunity whilst all around thousands were dying. In Kronstadt, for example, the general death-rate from cholera was 4·0 per 1000, while among the sailors it was 0·2. During the year there were eleven cases only in the entire fleet with four deaths. It is worthy of note that whereas pneumonia was mainly destructive towards the south, other affections of the respiratory organs prevailed in the rigorous north. In ice-bound Vladivostok there were but two cases of pneumonia during the year, while in snowy Archangel the disease remained conspicuous by its absence. The continuance of scurvy in the Russian Navy is a distinct sanitary blot. The compiler thinks that since the disease invariably appears during the period from May to September it cannot be due solely to defective hygiene. Season has evidently something to do with its occurrence and perhaps, he adds, it may owe its spreading tendency to infection. Out of 4018 venereal cases 858 were syphilitic. These diseases are steadily gaining ground, especially in certain seaports, Sevastopol and Baku being among the worst. The cause of this sanitary retrogression is twofold—(1) clandestine prostitution and (2) perfunctory inspection of the men who are allowed to absent themselves from examination on any trivial pretext.

THE CONDITION OF THE ARMY.

The correspondence between Mr. H. O. Arnold-Forster, Sir Arthur Haliburton, and others continues as lively as ever and is likely to do so until the question of army reform is thrashed out in Parliament. It seems to us, as we have already said, that on physiological and medical grounds we are, in order to create and maintain a reserve, losing a number of soldiers from the regular army just at the time that they are best fitted for service abroad with the colours. No one wants to return to long service as it existed years ago. What is wanted is that soldiers who desire to re-engage and continue in the service, instead of being relegated to the reserve, or who desire to leave the reserve and join the ranks, should have every opportunity of doing so if physically fit and of good character. As it is at present the soldier who cannot find employment in civil life and desires to re-enter the ranks of the army and go on for pension cannot do so unless he refunds his deferred pay, which is a prohibitory condition. The army requires, or would at any rate be benefited by the presence of, a certain proportion of such men, although their numbers might be limited by the requirements of the service and considerations of cost; in other words, the introduction of more elasticity into the present system is needed; and if we have understood Lord Lansdowne's remarks aright it is this that he is prepared to carry out. The fact of the British army being a voluntary one and the requirements of India and the colonies unquestionably make the problem a very difficult one to solve.

THE INDIAN FRONTIER WAR.

There is but little to chronicle regarding matters on the Indian frontier. The wounded are reported to be doing well. The Zakka Khels are still irreconcilable and have not submitted to the terms proffered them. The Khyber is still in a disturbed state, but the Indian authorities have decided to permit caravans under the protection of military escorts to pass along the Khyber Pass, and we shall consequently soon learn whether trade with the mountain tribes and Afghanistan has been re-established.

PRINCESS HENRY OF BATTENBERG AT NETLEY.

On Wednesday afternoon, Jan. 26th, Princess Henry of Battenberg visited the Royal Victoria Hospital, Netley. The object of the visit was to convey a message of sympathy and admiration from the Queen to the soldiers and particularly to

those who have just returned from active service. Surgeon-Major-General Nash was among those who assembled at the Hospital pier to meet her Royal Highness and party.

THE COMPOSITION OF REGIMENTS.

The *Times* of the 25th inst. contained a communication under the heading of "The Scottish Regiments" which may be read with interest at the present time in connexion with the recruiting and constitution of the army and the changes which have taken place in it during the present century and especially during the latter part of it.

The *Broad Arrow* states that "Some idea may be formed of the serious effects which the Indian Frontier Campaign has had on the strength and health of the European regiments engaged, judging from the latest returns of the Gordon Highlanders. That corps went into the field 897 strong of all ranks; its loss from killed, wounded, and sick has amounted to 377, leaving a present total strength of 520."

Correspondence.

"Audi alteram partem."

MIGRAINE AND ARTHRITIS.

To the Editors of THE LANCET.

SIRS,—These notes of six cases of acute pain in the ankle-joint commencing in young adult life I have ventured to place together, as they bear such a strong resemblance to each other, and what would explain one would probably explain all. That there is some difficulty in forming an opinion on them I have good evidence, for the patient in Case 3 alone was variously diagnosed and treated by different experienced physicians as strumous disease, rheumatoid arthritis, gout, and a sprain. Whatever the true pathology of these attacks, the later history of two of them may be some guide to giving a correct prognosis in the others.

CASE 1.—A bright, intelligent girl, very quick at learning, at the age of fourteen years suddenly one afternoon had severe pain and swelling of the right ankle. There was no history of an accident. The veins around the joint were much enlarged and the "joint throbbed." The attack passed off the same night and the joint was perfectly well for six months, when she had an exactly similar attack. Three attacks have since occurred at irregular intervals. The medical man called it "rheumatism." She suffers severely from migraine.

CASE 2.—An unmarried woman, aged fifty-two years, has had similar attacks to the above since she was fifteen years of age at very irregular intervals, but has had no attack since the catamenia ceased five years ago. The patient had been a martyr to migraine headaches until the last few years, when they have entirely left her.

CASE 3.—A strong, healthy man, aged forty-one years, has had attacks of inflammation in the right ankle since the age of sixteen years. They seldom last more than twelve hours and he can play a hard game of lawn-tennis or ride a bicycle on the second day. They are getting gradually less frequent and less severe. He has always been subject to migraine attacks, but these are becoming less troublesome.

CASE 4.—A strong, active man, a carpenter, aged twenty-six years, was under observation for Bell's paralysis when he had an attack in his right ankle. The pain was very severe for a few hours and there was swelling of the veins about the joint followed by a slight amount of synovitis. There were no gouty symptoms and a blister gave no urate of soda crystals. He had had similar attacks since he was fifteen years of age and suffered much from migraine.

CASE 5.—A bright, intelligent lad, aged eighteen years. He had had three similar attacks during the last two years. He also suffered from headaches on one side of his head, &c.

CASE 6.—A highly educated youth aged twenty-two years, who had taken a scholarship and high honours, had his first attack at fourteen years of age and did not know how many since. They seldom laid him up for more than one day and he played and won a "single" lawn-tennis match on the third day after one attack. He dreaded his migraine far more than his bad ankle.

The attacks resemble gout, and that I confess may be the true diagnosis, but they all present these ungout-like symptoms. They all feel "unusually well" before an attack and there are no premonitory dyspeptic symptoms. In none of the attacks that came under my notice was there any marked rise of temperature and they do not tend to return on the following night. Recovery is rapid and complete, there is no tendency to spread to other joints, and they tend to get less frequent and less marked as age advances until they cease at middle life. No urate of soda crystals can be obtained from a blister.

I have seen several similar cases of which I have kept no notes, and an aged medical friend, since dead, who saw the patient in Case 3 with me in consultation told me that he himself had had similar attacks in his youth, but that they had ceased for many years. He called them "rheumatic gout," but did not pretend to understand their pathology. He gave, however, a good and true prognosis in Case 3, the only true one he had received. All these cases had what may be termed "disjointed migraine"—i.e., they had the retinal projections with "escapement-wheel" figures at one time, hemicrania at another, and numbness of lips, hand, &c., at another. Is it not possible that these joint attacks are another symptom of this obscure complaint? The distension of the temporal artery so common with the hemicrania proves that migraine does cause vaso-motor effects, and the conjunctivitis that occasionally accompanies it shows that the smaller vessels may also be affected. In some migraine patients the numbness is confined to one hand, and is it not therefore possible that these cases of arthritis or arthritic congestion are a concentration of the vaso-motor storm on a single joint?

It is difficult to believe that these attacks are due to a deposit of urate of soda, for they are too transient and there is no sign of such deposit elsewhere. There is such a total absence of constitutional symptoms that it seems impossible that they are due to rheumatism or any other form of blood-poisoning. The only remaining disease, therefore, with which they can be classed is rheumatoid arthritis, which is placed with the neuroses. I would venture to suggest, then, that these ankle attacks are of neurotic origin and that they are closely connected with that obscure nervous disease called migraine.—I am, Sirs, yours faithfully,

Jan. 15th, 1898. CLAYTON JONES, M.B. Oxon.

"LEGISLATION AS A REMEDY FOR MEDICAL GRIEVANCES."

To the Editors of THE LANCET.

SIRS,—So large a portion of space is devoted in your current issue to the debate between Mr. Brudenell Carter and Mr. Horsley and matters connected therewith that it is hardly to be wondered at that the reply of the former should have been crowded out. Yet there are one or two matters in it of such importance to the profession that I venture to ask you to afford me space to refer to them. Of these the most weighty is undoubtedly the estimate expressed by Mr. Carter, a typical member of the Council as constituted by the Act of 1858, of the position and influence of the Direct Representatives granted to the profession by the legislation of 1886. He thinks it within the bounds of possibility that in some other body not concerned officially with either education, examination, or registration, not merely a small proportion, but even a majority, or possibly the whole, of the members might be elective. He, however, just as evidently thinks that on the General Medical Council they are entirely out of place; in fact, he says in express terms (I quote from a transcript of shorthand notes) that where questions of education and examination have to be discussed and settled in detail it must be by the representatives of *the bodies that have to carry them out* and that the latter *would not accept dictation* from other persons. Mr. Carter has evidently forgotten the very recent instance in which outsiders not only interfered but compelled the Council to bow humbly to and obey their mandate.

Mr. Carter is clearly of opinion, this and other facts notwithstanding, that "everything is for the best in this best of all possible" councils except the presence upon it of the Direct Representatives, of whom he says that whilst their presence might be useful if the Council were inclined to falter in the path of duty, yet there being no evidence of this, the stimulation they supply is unnecessary, nor will the Council be much influenced by it. It remains to be seen how the profession will regard this slur upon, this insult to, those whom it has chosen to represent it and who have an equal position and voice in the Council with the nominees of

the corporations. For the present, it is clear that Mr Carter's complacent view of the general action of the Council is not shared by the profession at large, to whom we commend this and other of Mr. Carter's statements and omissions for consideration.

I am, Sirs, yours faithfully,

EDWARD C. BOUSFIELD.

Old Kent-road, S.E., Jan. 21st, 1898.

To the Editors of THE LANCET.

SIRS,—Mr. Brudenell Carter in his recent address made the following statement: "..... and that Mr. Horsley assailed the action of the President (Sir Richard Quain) in a manner which induced decent people to leave the room rather than remain to listen to him." As I was present (in my official capacity as hon. secretary of the Ethical Section) during the whole sitting I can testify to this fact, that Mr. Horsley had a larger audience to listen to his paper than any of the speakers who preceded him, and although I cannot assert positively that no person, decent or otherwise, left the room while his paper was being read, yet I can most unhesitatingly assert that no considerable portion of the audience did so.

I am, Sirs, yours faithfully,

Cardiff, Jan. 24th, 1898. T. GARRETT HORDER.

To the Editors of THE LANCET.

SIRS,—It seems to me that much of the misunderstanding between Mr. Horsley and Mr. Carter as regards the force and operations of our present Medical Acts can be easily cleared.

Mr. Horsley, in opening his address, reported by you in THE LANCET of Jan. 22nd, very properly observes that the preamble of the Act of 1858 states that it was expedient that persons requiring medical aid should be able to distinguish qualified from unqualified practitioners. So far, so good. To my mind that is the whole and sole aim and object of the Act and the only penal power under it applies to those who, by falsely assuming a title which they do not possess, would render the Act of none effect by disenabling the public to distinguish qualified from unqualified practitioners. Mr. Horsley then goes on to say: "The Act therefore was constructed not to protect a mere title but a person who practises his profession." It is to this assumption I take exception. This is merely Mr. Horsley's opinion of what the Act does, whereas I contend it does nothing of the kind. And it is from the fact that Mr. Horsley argues from this assumption that all his confusion of thought arises. I think he is right in stating that it is registration alone that gives one the right to describe oneself as a legally qualified practitioner and the Act of 1886 makes clear what diploma or diplomas shall give one the right to register and thus become "qualified." Indeed, in courts of law the fact of registration is the only question proper to be raised. But we medical men commonly use the term "qualification" to mean what degree or diploma does a man hold. So those two uses of the word "qualification" must be differentiated. Legally the only qualification is being registered. Colloquially a "qualification" is any degree, licence, or diploma that gives one the right to be registered. Here I agree with Mr. Horsley, who says: "So that our diplomas do not give us in the eyes of the law the right to practise but the right to demand that our names shall be placed on the Register" But again Mr. Horsley spoils it all by adding: "The obvious inference is that any person not on the Register should be prosecuted." So far from this being an obvious inference, to me this is no inference at all. Mr. Horsley is wrong again when he speaks of "the General Medical Council allowing the Apothecaries' Society to examine in the three" subjects. But I need not go into this question as it is so ably answered by Mr. Carter in THE LANCET of Jan. 22nd, page 204. Mr. Horsley further says: "All that is apparently wanted is a slight rearrangement of the words of the section," making it penal for anyone save registered practitioners to practise medicine, surgery, and midwifery. This may be only a slight rearrangement in words, but it is an enormous difference in fact. Very desirable no doubt, but a totally different thing.

The Act of 1858 is like a good many other Acts on a good many subjects. It gives you a penal clause, but it lays the duty of enforcing it on no one. Surely we all know many good Acts dead letters for want of provision of means to enforce them. Mr. Horsley, in his reply,[1] seems again to miss the point He says the man in the street is not entitled to practise. I maintain he is *able* to practise provided he does not falsely represent himself to be qualified and provided he does not come within the reach of the Apothecaries' Act of 1815.

In conclusion, I think we have an admirable Direct Representative in Mr. Victor Horsley, that his report published by you in THE LANCET of Jan. 22nd is well worth our serious consideration, and that the practitioners of the country should be grateful to him on account of his courage, energy, and ability, but that he is mistaken about the force of the Medical Acts. As regards Mr. Carter we must all deplore the personal part of his attack on Mr. Horsley, particularly as reported by you in THE LANCET, pages 201 and 203 But as regards the law of the subject he is undoubtedly right, and I for one think his view of the question the right one, and as a member of the Society of Apothecaries which he so ably represents applaud his ample vindication of our status and rights. Having thus succeeded in displeasing both champions nothing now remains but for me to subscribe myself, Sirs, yours faithfully,

THOMAS CARR, M.D. Durh.

Braintree, Essex, Jan. 22nd, 1898.

To the Editors of THE LANCET.

SIRS,—In common, I can hardly doubt, with many of your readers I am surprised that the members of the South-West London Medical Society present the other night to hear Mr. Brudenell Carter should have remained to listen to his personal attack on Mr. Victor Horsley. What, one would like to know, have these miserable personalities to do with medical reform? Mr. Carter certainly has done Mr. Victor Horsley a splendid public service by affording him an opportunity of showing that, whilst smarting under an evidently grossly unfair and bitter personal attack, he was able to stand up and deliver himself of a calm, dignified, and judicial answer, which cannot fail to enhance his already high reputation as one eminently fitted to be a leader among the medical reformers. Mr. Carter tells us that he was a member of the profession before Mr. Horsley was born. *Noblesse oblige.* Age surely has its responsibilities as well as its privileges, and to be accused of being a young man is a soft impeachment which few will be found to resent, especially when youth has been productive of such brilliant achievements as Mr. Horsley's. Rightly or wrongly there can be no question of the want of confidence felt in the General Medical Council by the great mass of general practitioners. Let Mr. Brudenell Carter enter the lists as Mr. Horsley's opponent at the next election for Direct Representatives, and I venture to promise that when it is over his labours on the General Medical Council will not be greatly prolonged.

I am, Sirs, your obedient servant,

Jan. 24th, 1898. COUNTRY SURGEON.

"THE SOCIETY OF APOTHECARIES AND MR. VICTOR HORSLEY."

To the Editors of THE LANCET.

SIRS,—Mr. Upton has now spoken, as Mr. Carter promised he would. It would have been better if, before assuming that I had talked "unintelligible" nonsense, Mr. Upton had done me the honour to inquire of me whether my speech which you printed last week (in which the Society of Apothecaries was mentioned) was correctly reported, because it would have saved him from writing on my views and knowledge of the Apothecaries Act Amendment Act of 1874 much that has no meaning. The corrections, which I would have gladly supplied him and which render part of Mr. Upton's letter wholly inoperative, are contained in my letter published immediately after his in the *British Medical Journal* of Jan 22nd.

Leaving out, therefore, the third, fourth, and part of the fifth paragraphs of Mr. Upton's letter as being not germane to the subject I must before entering upon the important matter which gave rise to Mr. Upton's letter answer two points made by Mr. Upton—firstly, that he is at a loss to know why his name should have been mentioned at all and,

[1] THE LANCET, Jan. 22nd, 1898, p. 247.

secondly, that he is not "the secretary" of the Society and "has in fact nothing to do with the examining functions of the Society except as their legal adviser." I mentioned Mr. Upton's name because when the matter came up at the General Medical Council the question originated in a letter signed by him and when I contested the validity of its contents the Council were given to understand that he would personally explain, as Mr. Carter said he would. This fact, in view of Mr. Upton being the legal adviser of both the Apothecaries' Society and the British Medical Association, obviously assumed a very special importance. As regards the second point it must not be understood from Mr. Upton's "correction" that he is only the legal adviser and not "the secretary," or that my original statement—namely, that he is the solicitor and secretary—is wholly incorrect, for as a matter of fact Mr. Upton is "the solicitor and clerk," and as "the clerk" he does the secretarial work of the Apothecaries' Society as shown by the official letters to the General Medical Council, which are signed by J. R. Upton, clerk to the Society. Now for the main issue.

On the strength of a letter written by Mr. Upton to the General Medical Council, in which he stated that a practitioner whose name had been erased from the Register and from the list of Licentiates of the Apothecaries' Society "still held the qualification of L.S.A.," the legal advisers of the General Medical Council advised the members of the Executive Committee that they should recommend the Council to restore the name of the practitioner to the Medical Register. When the matter came before the Council I drew attention to the claim that this involved on the part of Mr. Upton writing on behalf of the Apothecaries' Society (*vide* my paper published in THE LANCET of Jan. 1st), and I am most agreeably surprised to find from Mr. Upton's letter that my objection is actually in his view correct. My whole contention was that a diploma—e.g., that of the Society of Apothecaries—was only of value when the person holding it was registered and when his name was on the list of diplomates and that it has no value in the absence of registration. Mr. Upton now says distinctly that the Society "never meant or intended to assert that their diploma *without registration* enables the holder to practise medicine, surgery, and midwifery." If that is so then that is exactly what I stated and I am gratified to find that I have Mr. Upton, the solicitor of the Apothecaries' Society, on my side so strongly against Mr. Brudenell Carter, the representative of the Apothecaries' Society.

We now come back to Mr. Upton's use of the word "qualification." As regards this very essential matter it is distressing to find that although, as we have just seen, in one paragraph he states satisfactorily enough that a diploma without registration is no use and does not "enable the holder to practise," he nevertheless says in an earlier paragraph that if a person who has once been granted a diploma has been struck off both the Medical Register and the list of Licentiates of the Apothecaries' Society he yet "cannot be successfully proceeded against for unqualified practice." In other words, he asserts that such a person's practice is qualified—i.e., legal; i.e., registered—which thing is an absurdity because the case considered is that of a person whose name has been erased from the Register. Thus Mr. Upton's fifth paragraph is diametrically opposed to his ninth. It is plain that both the profession and the subject are worthy of a somewhat fuller and less contradictory explanation from Mr. Upton.

I am, Sirs, yours faithfully,

VICTOR HORSLEY.

Cavendish-square, London, W., Jan. 22nd, 1898.

'THE UNQUALIFIED ASSISTANT AND THE GENERAL MEDICAL COUNCIL."

To the Editors of THE LANCET.

SIRS,—We owe the destruction of the unqualified assistant entirely to the action of the Medical Defence Union, whether for ultimate good or evil is clearly a matter on which there is a very wide difference of opinion amongst the profession. One thing more we certainly must expect of the Medical Defence Union—that it shall be consistent. The General Medical Council is practically a court of law before whom solicitors and counsel appear. The prosecuting Union seems to do its work by means of its secretary. Why should it act against the unqualified practice of medicine and actively itself pursue the unqualified practice of the profession of law?

I am, Sirs, yours faithfully,

Birmingham, Jan. 22nd, 1898. LAWSON TAIT.

To the Editors of THE LANCET.

SIRS,—The subject of qualified *versus* unqualified assistants has a special interest for those who like myself began their student career in the year 1860. That year was unique as being between the year of compulsory registration of all medical practitioners—1859—and the year of compulsory preliminary examinations for medical students—1861. There was a great rush in 1860 to escape this and a large accession of first year's students at all the medical schools. Some students, myself included, elected to undergo the preliminary examination and were successful, others were unsuccessful and a very large proportion escaped it. Shortly after this considerable improvements were effected in the medical education which I need not detail as they are so well known and the examinations were made much more severe.

When I became a qualified assistant in 1865 I had to produce my certificate of registration before I was permitted to enter the workhouse to which my principal was surgeon as his substitute. I was also required to give proof of my qualifications before making a post-mortem examination for the coroner. Subsequently I acted as assistant to two other surgeons, and the demand for qualified assistants was general, though here and there I encountered an unqualified one and an unqualified locum tenens.

Surely the unqualified assistant and those who employ him cannot plead that he has not had every possible indulgence and every reasonable notice to quit, except in his legitimate employment as a dispenser and bookkeeper. Surely also it is a retrograde step on the part of such practitioners as have undergone preliminary examinations, greatly improved medical education, and severe professional examinations, to employ an unqualified assistant to visit and attend obstetric cases for them, thus placing him on a par with a fully qualified gentleman. If a practitioner finds his practice too large to conduct by himself he should seek the aid of a qualified gentleman to assist him as a partner rather than as an assistant, the term being an unfortunate one, too often taken by the public as implying an unqualified man.

The dispensing must, I fear, constitute a difficulty becoming more and more irksome after such a curriculum as the present one, and after such examinations as are now held. To expect a qualified assistant after a hard day's visiting and a night's midwifery to go through the drudgery of dispensing all the medicines he has prescribed himself and his principal also is hardly reasonable, and yet I shall probably be told that few (if any) practitioners can afford to keep both a qualified assistant and a dispenser. Perhaps some of the former will lead the forlorn hope, but in any case the day of the unqualified assistant is passed.

I am, Sirs, yours faithfully,

Jan. 24th, 1898. A PROVINCIAL SURGEON.

*** We do not see that any good purpose will be served by publishing more letters on this topic at present. Our readers have been able to hear all sides and the correspondence fitly closes with "A Provincial Surgeon's" letter.—ED. L.

THE VALUE OF A DEFENCE UNION.

To the Editors of THE LANCET.

SIRS,—As I have had a recent personal experience of the value of medical defence I think it worth laying before your readers, in order that they may not be content to merely discuss the matter but may also, if they have not yet done so, place themselves in safety from any cost in money or anxiety about such things. Last November I was elected honorary surgeon to the Bradford Eye and Ear Hospital and at intervals during the following fortnight paragraphs appeared in the tattle column of a local evening paper in appreciation of an unsuccessful candidate, deprecating my appointment and suggesting that the election had not been quite square. The matter was at once placed by me in the hands of the Medical Defence Union with the result that the newspaper twice published apologies, paid £25 to a local charity nominated by me, paid all legal expenses, and to-night published a statement of the payment

of these moneys. This attack came like a bolt from the blue. Had I not had the Medical Defence Union to fall back on I would have had to suffer in silence; as it was, the result speaks for itself.

I am, Sirs, yours faithfully,

JAMES KERR, M.A., M.D. Cantab.,
Honorary Surgeon, Bradford Eye and Ear Hospital.

Bradford, Jan. 24th, 1898.

THE MARKING OF INFECTED HOUSES.

To the Editors of THE LANCET.

SIRS,—The College of Physicians of Philadelphia will at its next meeting in February discuss the regulation of the Board of Health placarding houses in which are contagious diseases. A member of the College has informed me that such a custom would not be tolerated in England and I will be grateful to you for any information on the rules and regulations of the London Board of Health in this matter of specifying houses in which there are contagious diseases.

I am, Sirs, yours faithfully,

GEO. WOODWARD,
Member, Board of Health, Philadelphia.

Bureau of Health, Philadelphia, Jan. 11th, 1898.

*** If circumstances should ever arise making such placarding an advantage to the public weal we believe that Englishmen would be sufficiently good citizens to submit at once to the regulation. The practice is, however, unknown in modern England.—ED. L.

"HYDROCYANIC ACID AS AN ANTIDOTE IN CHLOROFORM POISONING."

To the Editors of THE LANCET.

SIRS,—It is true that Dr. Lauder Brunton in his excellent work on Therapeutics[1] states that hydrocyanic acid is "one of the most powerful and rapid poisons known" and that it has "a special paralysing effect upon the respiratory centre," but it is also well known that different doses of the same drug may produce entirely different effects. As Dr. Brunton very aptly puts it in his more recent work,[2] "A stroke from a switch will quicken any animal to increased exertion, but a blow from a bludgeon may knock it down and render it incapable of any exertion at all."

The use of hydrocyanic acid as an antidote to chloroform is an almost typical illustration of this. When given to a healthy animal in large toxic doses it speedily causes death, the latter occurring so rapidly that it requires a keen observer to note any very numerous train of symptoms. When, however, a smaller but still toxic dose is given definite symptoms (which are divided into three stages by Dr. Brunton) can be observed. With a still smaller dose—a dose which is the full medicinal or, perhaps, slightly over medicinal without being fatal—it is possible to produce certain results which are directly antagonistic upon the heart and respiration to those caused by over-doses of chloroform; this is the stage which is aimed at. In a healthy animal such a dose will within a few seconds produce respirations which are at first somewhat irregular and slow, but speedily become strong and powerful, whilst the pulse is at first slightly slower, then quickly increased in frequency and somewhat irregular, in a short time becoming full and regular.[3] Upon the heart, when the animal is deeply anæsthetised, prussic acid in these doses seems to have a distinctly beneficial effect in relieving the congested, semi-paralysed condition into which that organ has been thrown. Another great advantage, too, that this antidote possesses is that when once respiration has recommenced the pharmacological action of the drug tells us that the latter will greatly assist in maintaining it until the centre has sufficiently recovered to be able to look after itself, as we know that the visible action of the acid will last for about half or three-quarters of an hour.

I was particularly struck when observing its action upon the first few cases with the rapidity with which animals recovered from prolonged operations under chloroform when a small dose of hydrocyanic acid was given to them. I formed the opinion at the time that this was largely due to the stronger and deeper inspirations and expirations respectively causing a greater amount of fresh air to be inhaled and also more of the chloroform vapour to be expelled. This seems, too, to afford a reasonable explanation.

I am, Sirs, yours faithfully,

FREDK. HOBDAY.

Royal Veterinary College, London, N.W., Jan. 24th, 1898.

[1] Pharmacology, Therapeutics, and Materia Medica. Third edition. Pp. 586 and 234.

[2] Action of Medicines, p. 34.

[3] Journal of Comparative Pathology and Therapeutics, 1893, p. 107 et seq. Idem, 1898, p. 101 et seq.

"TRANSMISSION OF SYPHILIS TO THE THIRD GENERATION."

To the Editors of THE LANCET.

SIRS,—Dr. George Ogilvie's conclusions on hereditary immunity in the third portion of his interesting paper, which is referred to in THE LANCET of Jan. 15th, are to a considerable extent founded on the discredit thrown by Professor Neumann upon Fergusson's observations on mitigated disease in Portugal in 1812. Dr. Ogilvie considers on those grounds that Mr. Henry Lee's views on individual hereditary immunity, dependent as they were to some extent upon Fergusson's observations, seem to "stand on a weak foundation"; that "the reports from different Russian, German, and English regiments adduced by Ferguson and Lee have, if possible, still less claim to trustworthiness"; and that the sad state of the British army at the present time in India (which I might say is a counterpart to the state of the army noted by Fergusson in Portugal) is "sufficient to considerably shake any theory of general immunity." The observations of William Fergusson (not Ferguson), for two years the Inspector-General of Hospitals to the Portuguese army, seem to me to be so conclusive and, moreover, verified at the time by Staff-Surgeon Jebb that it is impossible to accept Dr. Ogilvie's interpretation.

Everyone will agree that hereditary immunity is not the only cause of modified syphilis in the male. Neisser, while attributing the diminution of malignant syphilis (in his paper on Malignant Syphilis in the *British Dermatological Journal* for January, 1897) to hygienic, preventive, and therapeutic causes, which Dr. Ogilvie acknowledges, nevertheless says: "Nor have I noted during the recent great extension of syphilis in Russia that an unusual proportion of cases of malignant syphilis has been noted ..... it is interesting in this reference to draw attention to the fact that Epstein has recently recorded a remarkable number of cases of malignant syphilis, amongst the Jews ..... he is inclined to account for his observations on the hypothesis that the individuals of a community which has been free from syphilis tend to show the malignant type more frequently when at length attacked than the members of a population which has experienced the disease for generations." That is Fergusson's theory, which to be fully appreciated should be read in its entirety in the fourth volume of the Transactions of the Royal Medical and Chirurgical Society. I am, Sirs, yours faithfully,

JOHN A. SHAW-MACKENZIE.

Grosvenor-street, W., Jan. 18th, 1898.

"THE MECHANISM OF DEATH FROM CHLOROFORM."

To the Editors of THE LANCET.

SIRS,—I note in THE LANCET of Dec. 4th, 1897, a letter by Mr. Alexander Wilson called forth by my criticisms on his article published in your issue of Sept. 11th. His first point is that I did not read his paper carefully nor give his expressions their proper value. I read the paper sufficiently carefully to notice the immediate juxtaposition of the expressions "free respiration" and "breathing deeply," with the expression "some peculiarity about the colour of the face," this last denoting an attitude of mind so slovenly and inexact that it is impossible to consider the two former as necessarily accurate. Similarly in Case 3 the very point of my criticism is that with observation so inaccurate that the intense circulatory failure present passed entirely unnoticed by the anæsthetist and was only discovered on making an incision the further statement that respiration was going on freely cannot be taken on trust. As the facts in these two cases are not unimpeachable their value as the basis of a theory is gone.

As regards the question asked by Mr. Wilson with respect

to Case 7 I am glad to say that no patient of mine has died by being suffocated by the root of his tongue, for I have hitherto always recognised the state of affairs and brought the tongue forward. That this death was the result of suffocation and not of heart failure is almost certain from the following two facts: first, the presence of snoring which, whether due to falling back of the tongue or to paralysis of the soft palate muscles, is evidence of vibration of air produced by its being drawn through a narrowed orifice—that is, of obstruction; and, secondly, the subsequent congestion of the face which is precisely what would occur with obstruction to respiration and which at all events during the administration of chloroform is probably not caused in any other way. There are, then, solid grounds for considering that there was obstruction to respiration in this case and none for considering that there was primary circulatory failure. If this gradual suffocation be granted the mode of death is what one would expect with a medulla dulled beyond recovery. It is beside the point to try to justify the scantiness of information given in this case and in Case 6 by saying that it is quoted from Snow. By quoting it as he does Mr. Wilson tacitly admits that he considers that the description as he gives it adds weight to his theory, and this, as I have shown, it does not.

In Case 1 I realise that Mr. Wilson's contention is that shock may be produced by chloroform poisoning, but he does not prove it. He entirely fails to realise that the fact that he "considers the symptoms were caused by chloroform," though interesting, is of no moment. Others will consider with myself that the boy was not under the anæsthetic and was accordingly susceptible to shock from a powerful stimulus, but that equally is of no moment. Opinions have no place in a theory, which must consist entirely of facts and of inductions from them. In this case the "shock" immediately a most powerful stimulus just as it would have done had no chloroform been given, and can accordingly be amply explained without calling in chloroform to account for it. There is no shred of proof that death was due to chloroform poisoning and much to show that it was not, so that the case is quite useless as one on which to build up a theory as to the mechanism of death from that cause. In fact, as I said in other words in my first letter, Mr. Wilson makes no attempt to prove by the exclusion of other causes that the deaths he describes were due to chloroform poisoning nor any to show that primary circulatory failure occurred in a single one. Let me repeat that in one case the state of the circulation is never mentioned, and yet Mr. Wilson thinks it helps to prove that chloroform fatalities are due to primary failure of the circulation!—I am, Sirs, yours faithfully,

CLAYTON A. LANE, M.D. Lond.,
Surgeon-Lieutenant I.M.S.

Camp Shinowrie.

TREATMENT OF PNEUMONIA BY INHALATIONS OF OXYGEN GAS.

To the Editors of THE LANCET.

SIRS,—I have recently had under my care a case of extensive double pneumonia in which I used inhalations of oxygen, a few particulars of which may interest your readers. The patient was a strong, healthy woman, aged thirty-two years. She had a rigor one Saturday night and I saw her on the following Sunday afternoon when I found her to be suffering from extensive double pneumonia for which I prescribed appropriate treatment. I was summoned hastily the morning after (Monday) to see her as she was much worse. On my arrival I found the patient deeply cyanosed with signs of heart failure and dilatation of the right chamber; the pulse was scarcely perceptible at the wrist and the respirations were 54. She was practically dying. I thought it was a very suitable case for the inhalation of oxygen gas and through the kindness of my friend, Dr. Alcock, was fortunately enabled to administer it within half an hour. The immediate improvement was very striking. After five minutes' administration the patient improved so much that from being comatose she became quite conscious; the pulse could be counted at the wrist, the heart sounds became distinct, and the lividity was disappearing. The administration was continued for another five minutes with continued improvement of the patient and disappearance of the cyanosis. The administration was now stopped for ten minutes and again resumed for five minutes longer. The condition of the patient was now fairly satisfactory under the circumstances. I remained with her three hours longer, repeating the administration every half-hour a few minutes at a time, and I considered her so much improved that, yielding to the demands of general practice, I thought I might leave her for a time, giving instructions to the nurse to summon me at once if she saw any signs of returning "blueness." This unfortunately was not done and when I returned after an interval of about three hours I found that the patient had just died.

I am, Sirs, yours faithfully,

Goole, Jan. 17th, 1898. A. M. EBSKINE.

"SANTONIN IN SPRUE."

To the Editors of THE LANCET.

SIRS,—I notice in THE LANCET of Jan. 15th a letter from Dr. Charles Begg in which a reference is made to Dr. Thin's work on Sprue and think it desirable to express how greatly that work assisted me when in practice in Fiji at that time. I write of prior to the publication of Davidson's "Diseases of Warm Climates." Dr. Thin's was the only available account of this important, prevalent, and frequently fatal disease, and if it had not been for it I should have landed in the tropics without either information or guidance on this matter. In all the cases I had search was made for intestinal parasites, but though in a few cases ankylostomata were found in many cases they were absent and never present in sufficient quantities to justify their being considered a factor. My experience fully coincides with Dr. Thin's—namely, that when sprue has become thoroughly established unless a proper course of treatment is adopted and persevered in the disease invariably in time ends fatally. As to treatment the purely milk diet (half milk, half barley-water, slightly warm) from three to four ounces every hour with general hygienic precautions, warm clothing, flannel binder, &c., invariably gave good results if followed by removal to a cool climate. For diarrhœa salol and bismuth powders or $AgNO_3$ enemata were occasionally required. In semi-dysenteric cases simaruba (as advised by Dr. Manson) is of great use. Opium in any form was unsatisfactory. For constipation morning doses of sodæ sulphas either alone or combined with decotum aloes may be given.—I am, Sirs, yours faithfully,

CHARLES T. W. HIRSCH,
Late District Medical Officer for Rewa, Colonial Medical Service, Fiji.

Charlinch, Rectory-place, Woolwich, Jan. 24th, 1898.

"IMPRISONED TOOTH: AN OBSCURE CAUSE OF CERVICAL ABSCESS."

To the Editors of THE LANCET.

SIRS,—My attention has been called to an article on the above subject by Mr. T. R. Jessop of Leeds, published in THE LANCET of Jan. 15th, p. 150, which, I feel, demands some notice.

Under an impression that I was sufficiently acquainted with the pathology of alveolar abscess, or what is known of it, arising from unirrupted and necrosed teeth, also defectively developed and incarcerated teeth and other causes which give rise to inflammation in and about the surrounding structures and tissues of the mouth ending in abscess pointing either internally or externally—these are, I consider, so common and should be so readily understood by every properly educated dental surgeon—that I have not recently thought it worth while to call attention to the subject through the medium of the medical press, although some years since I have read papers before the British Medical Association and other societies which have mostly been published in some of the weekly journals; nor should I now have alluded to the subject but for reading Mr. T. R. Jessop's article, in which he quotes two cases that are as familiar to the hospital dental surgeon as varicose veins are to the general surgeon and which should be as easily diagnosed.

I consider Mr. Jessop's article a grave reflection on the professional knowledge of the dental surgeons in his district. Recrimination, however, is not my purpose in this communication, but I could quote a large number of cases which had run the gauntlet of more than one public hospital, some of which had never been seen by a dental surgeon before I saw them. Two cases are fresh in my memory. One, a soldier in the artillery then quartered at Trowbridge,

had been for some time a patient at one of the London hospitals suffering from alveolar fistula and had eventually left uncured. His health had suffered considerably by the constant drain from the sinus and he was discharged from the service. He subsequently turned up as an out-patient at this hospital and after being treated medically for a time I was asked to see him. The case was a simple one to diagnose; a probe was passed along a sinus extending from the symphysis menti to beyond the second molar tooth. No dead bone could be detected, but feeling certain the mischief was caused by an unirrupted wisdom tooth I decided to cut down to the bone over the space where the wisdom tooth should be and which was somewhat prominent. After fully exposing the bony surface I found the end of the sinus and passed a probe through it on to a cusp of an incarcerated wisdom tooth; the plate of bone covering it was removed and after it the tooth. In a fortnight from this time the whole sinus was obliterated and the man got rapidly well.

A similar case, that of a woman, who was brought to me by the late Mr. Biggs with a sinus pointing at the symphysis. This was still more simple as it was caused by a necrosed central incisor (non-carious). This woman had also been drifting about and was told at one hospital that nothing could be done for her short of taking out a piece of the jaw. This she fortunately did not submit to. After removal of the necrosed incisor she made a rapid recovery.

A case which has only recently come under my notice was that of a man, thirty-four years of age, who had an abscess pointing externally under the left malar bone; this was opened and the pus evacuated, he having been taken into hospital for that purpose. After being in the house a month and getting no better I was asked to see him and I found four or five necrosed stumps in the upper jaw on the same side; these were removed and he got rapidly well, as indeed after removal of the cause they all do.

I have only cited these as typical cases and there seems to be no rule as to where these abscesses may point. I have seen them point in the neck, over the acromion, at the sternal end of the clavicle, and in other out-of-the-way places. Quite 20 per cent. of these are seen and treated by the general practitioner or general surgeon before a dentist sees them at all.

The gist of Mr. Jessop's remarks on these cases would imply that a dental surgeon is incapable of forming a correct diagnosis, or if diagnosed should be handed over to the so-called "realm of surgery" for operation. In the foregoing remarks I have pointed out how seldom it happens that a dental surgeon sees such cases in their initial stage, or indeed before they have passed out of the "realm of surgery" uncured after having run a long and disastrous course, all of which would have been averted at an earlier stage had an expert first seen them.

I am, Sirs, yours faithfully,

CHARLES GAINE, M.R.C.S. Eng.,
Dental Surgeon to the Royal United Hospital, Bath.

Jan. 24th, 1898.

LEPROSY IN LONDON.

To the Editors of THE LANCET.

SIRS,—A few days ago I was called to see a patient whom I found, to my surprise, suffering from leprosy in its worst form. As I have had good occasion during my travels in China, Iceland, and the Baltic provinces of Russia to see similar cases I diagnosed it at once and thought it my duty to report the case under the Contagious Diseases Act to the medical officer of health of the district. If I may rely upon the statement made to me, my patient, although living for the last seven years in the middle of London and no doubt suffering from the disease for a long time, has been refused admission by several hospitals and homes for incurables. Considering the spreading of this disease in the Eastern Province of Prussia (Ost-Preussen), in the Austrian province of Bosnia, and in Russia, and the serious view taken by the International Leprosy Conference lately held in Berlin,[1] I should be very much obliged to know whether this case is an isolated one in England or whether cases of this old scourge of human kind have been observed by others.

I am, Sirs, yours faithfully,

OSCAR LEVY, M.D., L.R.C.P., M.R.C.S.

Vernon-place, W.C., Jan. 24th, 1898.

[1] Vide Mittheilungen und Verhandlungen der Internationalen Wissenschaftlichen Lepra-Conferenz zu Berlin im October, 1897. Berlin: Aug. Hirschwald.

THE PLAGUE IN INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

IT has been stated that cases of pestis minor do not occur during an epidemic—but only as preceding an epidemic or in mild outbreaks of their own. Here, at any rate, is an instance, and many others have been observed also. Seventeen Europeans have been attacked in Poona, with only one death, while the mortality throughout the district has exceeded 75 per cent. Notwithstanding the hundreds of British troops which have been daily employed in the town either on cordon duty, or as search parties for the sick or dead, or for disinfection of houses, not a single case has occurred among them.

A recrudescence of the epidemic is being experienced in Poona. While the mortality in the General Hospital in August last was 57 per cent. with 110 admissions, in September it was 58 per cent. with 340 admissions; in October 63 per cent. with 908 admissions; and in November 68 per cent. with 1421 admissions. For the first three weeks in December the mortality has been over 73 per cent., but the number of cases is somewhat diminished. These returns are much more favourable than those for the whole district, where 80 per cent at least is probably the average rate of mortality. The city of Poona is almost deserted, half the houses at least seem shut up and the estimated population is less than half its usual number. The birth-rate for the past six months is only one-fifth of the average—this alone showing the exodus from the city—while the mortality returns show more than five times the average number of deaths.

In Bombay the increase of cases still continues. 200 deaths from plague being recorded for the last week of 1897, although the recrudescence there has not yet attained the severity of the primary outbreak at the corresponding period last December. The mortality, however, is fearfully high, over 70 per cent., and probably more than 20,000 people have died from plague in Bombay during the past year. While all returns, except from the hospitals, are to a great extent faulty, approximate estimates can fairly be made. At the commencement of the outbreaks deaths from plague were probably not returned as plague at all but from fevers and lung diseases indiscriminately. The excess of the mortality over the average was thus the only guide. There being no satisfactory system of registration—the attendant at the burning or burial ground accepting the statements of the friends as to the cause of death—it is only the total mortality which can be accepted as a basis for any calculation. Again, it is almost impossible to estimate the correct number of the sick or of the dead because they are secreted from fear of detection and the dread of disinfection, hospital treatment, or segregation. It is very certain that the excess mortality over the average is very much larger than the returns of plague. For example, while for the past three months 4056 cases of plague have been reported for Poona only 2953 deaths have been attributed to it, whereas the excess mortality over the average amounts to no less than 3787. This notwithstanding that all cases of death for which a distinct cause is not known are returned as due to plague and that from ten to twenty dead bodies are discovered daily.

As time goes on more and more elaborate measures are being taken to combat this disease. While it is still raging with great virulence at Poona, Sholapur, and a few other places, it is declining in some and merely dragging on its existence in a large number. The cooler weather of winter seems favourable for its development (perhaps because the natives at night time huddle themselves together in close apartments), while it is checked by the onset of the hot season (perhaps because they can then sleep out of doors). So that we may look for a decline all round within the course of the next month or two. In addition to treatment of the sick in hospitals, provided at nearly every place where the plague has broken out, there are now observation camps or wards for the doubtful cases and segregation camps for those who have come from infected places. At several railway stations the clothes and baggage of all third-class passengers are being disinfected and the passengers themselves made to bathe in disinfecting fluid. In other places, again, a military or police cordon is being adopted under strict regulations. Infected houses are being disinfected with solution of perchloride of mercury or carbolic acid and afterwards limewashed and all attendants at funerals are compelled to go

for a time to the segregation camps. In Poona every house, whether infected or not, is in process of disinfection. Search parties are examining the houses of the natives for sick and dead, as the apprehension against the hospitals and camps has not yet subsided and many cases continue to be secreted. Such are the measures which are now almost everywhere being adopted.

With regard to cases it is found that those with cerebral symptoms, those with hæmorrhages, those with double cervical or parotid glands, and those with early pneumonia are very fatal. Pregnant women almost invariably abort and their mortality is very high (85 per cent.). Some of the earliest symptoms observed before marked fever or glandular enlargement has occurred are, an unsteady gait, a peculiar glassy appearance of the eye with injection of the conjunctiva at some distance from the cornea, a tendency to drowsiness, and a peculiar form of speech. Of sequelæ chronic sores from suppurating glands are the most common, but inflammatory affections of the joints, loss of coördination of the muscles, and parophthalmitis are frequent. The conditions for discharging a patient at the Poona General Hospital are chiefly that the temperature must have been normal for five days, that all sores must have healed up, and that the patient can walk well. The exact duration of a patient's infectiveness is unknown.

It seems an extraordinary thing that in the absence of the health officer for Bombay on considerable leave at a time when plague is raging fiercely throughout the city the person appointed as acting health officer should be not only without a qualification in public health, but be not even a medical practitioner. Whatever experience in some subordinate office this gentleman may have obtained by long service it is absolutely impossible that he can be properly fitted to fill such an important post. I understand, moreover, that he is in receipt of a salary which would command the services of a properly qualified man. In the interests of the public health I commend this appointment to the notice of the Government. I cannot but feel, however, that this action on the part of the municipality is a distinct insult to the medical profession.

Out of the 1891 Census population of about 120,000 there have been during the past year 10,000 deaths, and this, be it remembered, where the birth-rate indicates a reduction of the population to considerably less than half its usual number.

At Satara plague is on the increase, while at Belgaum only a few cases remain.

M. Haffkine is now at Poona inoculating any who are willing to submit to the process. The plague there shows a decline.

Jan. 7th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Children's Hospital.

THE thirty-seventh annual report was read at a meeting of this charity on Jan. 25th. It stated that the number of in-patients treated in 1897 were 919, as compared with 992 in 1896; out-patients 13 009, against 12,987; the detention-rate was 21·36 days, against 21·7; the death-rate calculated on the in-patients was 8·8 per cent. The use of the twenty beds at Moseley Hall had been of the greatest advantage. Forty-five patients had been treated in the diphtheria ward during the year. The expenditure amounted to £4283, the total income falling short of this by £32 2*s.* 9*d.* notwithstanding that the year began with a deficiency of £397 14*s.* 10*d.* The Lord Mayor, who presided at the meeting, commented upon the high death-rate, which was due mainly to cases of diphtheria, and the usual votes of thanks were passed.

The Dental Hospital.

The thirty-eighth annual meeting of the governors was held on Jan. 26th. The financial statement showed a balance of £234 4*s.* 3*d.*, of which £200 would be reserved for building at the end of the lease. The number of operations under ether was 31 and under nitrous oxide gas 700. It was pointed out that the institution was behind the times with regard to sanitation and convenience and that a new hospital equipped in modern fashion is much needed.

Mason University College.

The impetus given by the first meeting of the governors under the new scheme is destined to have important and far-reaching effect. The whole question of future prosperity, as lucidly pointed out by Mr. Joseph Chamberlain at the luncheon, is largely one of funds. A very high figure was mentioned in connexion with this aspect of the subject—namely, £250,000 for endowment and administrative purposes. The local brewers have contributed liberally towards the founding of a chemical chair to the amount of £20,000, and though as yet no list has been published it is confidently expected that a generous response will be made to the appeal.

Sir Willoughby Wade.

The retirement of Sir Willoughby Wade from Birmingham is a source of sincere regret to the profession and his many friends. It is understood that the health of Lady Wade is the reason for this determination. The choice of Florence as their future home will, it is hoped, realise the expectation of improved health to Lady Wade, and admit of a prolonged and happy life to both.

Jan. 26th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Northern Hospital.

THE annual meeting of the subscribers to this charity was held in the town-hall on Jan. 19th, under the presidency of the Lord Mayor. The report states that the work of the hospital has been satisfactorily carried on during the year 1897. The hospital contains 155 beds. The number of in-patients attended to amounted to 1437; the out-patients numbered 6444, involving 18,146 attendances. The ordinary expenditure reached £7110 19*s.* 7*d.*, against £6519 5*s.* 9*d.* in 1896. There is a balance of £1169 8*s.* 9*d.* owing to the bankers. The outstanding liabilities were £782 16*s.* 3*d.*, against £862 4*s.* in 1896. The receipts from all sources have been £6767 16*s.* 11*d.*, and were derived as follows:—Legacies, £1290 15*s.* 1*d.*; donations, £524 8*s.* 4*d.*; Hospital Saturday and Sunday Fund, £1482; subscriptions £1857 6*s.* 7*d.*; other sources £1613 6*s.* 11*d.* The convalescent fund continues to be of great value and enables the committee to send patients to convalescent institutions as a means of hastening their recovery. The horse ambulance, introduced in the year 1883 at the instance of Mr. Joynson and claimed to be the first institution of the kind in the United Kingdom, continues to be of the greatest service to the public. The nursing institution in connexion with the hospital has proved of great value both to the hospital and the general public. The nurses receive excellent training and none but those fully competent are sent out. The work of the new hospital is progressing favourably, and it is hoped that the new nurses' home may be ready for occupation in the course of a few months. It is satisfactory to find that the appeal of the committee for a special fund for the new hospital has been liberally responded to. Of the £40,000 asked for £39 938 2*s.* 7*d.* have been received, including a grant of £10,000 from the corporation of Liverpool. After purchasing the site, furnishing the new hospital, transferring £4000 against the accumulated debt, and investing £8417 11*s* 6*d.* for maintenance there was a balance at the bankers' of £9600 19*s.* 11*d.*

Liverpool Northern Hospital—Commemoration Banquet.

The approaching demolition of the old Liverpool Northern Hospital to give place to the new building in course of erection suggested the idea of holding a gathering of past and present residents and honorary medical officers with the object of visiting for the last time an institution associated in the minds of so many with pleasant and interesting reminiscences. A banquet was decided upon as the fittest mode of commemorating this event. Old members of the honorary and resident staffs—physicians and surgeons from all parts of England many of whom have risen to eminence—evinced their sympathy with the object by coming from long distances. The banquet, which took place on Saturday, Jan. 22nd, at the Exchange Station Hotel under the presidency of Dr. Frederick T. Roberts, of University College Hospital, London, a former resident at the Northern Hospital, fully justified the promoters in anticipating a successful gathering. Sixty-six gentlemen sat down to dinner, including Mr. Reginald Harrison

(London), a former resident, Dr. E. H. Dickinson, Mr. Chauncy Puzey, Dr. James Barr, Dr. T. R. Bradshaw, Dr. Macfie Campbell (president of the Liverpool Medical Institution), Dr. T. R. Glynn, Dr. R. Caton, Fleet-Surgeon Lyon Vasey, Brigade-Surgeon-Lieutenant-Colonel Oldham, Brigade-Surgeon-Lieutenant-Colonel Norris, Dr. J. H. Finegan, Colonel Macfie, C.B., Mr. Louis S. Cohen (one of the David Lewis trustees), and Mr. J. E. Sheppard (chairman of the committee of the Northern Hospital). After the toast of "The Queen" had been duly honoured the chairman proposed the toast of "The Northern Hospital" in an able speech, relating many amusing incidences which had happened when he resided at the hospital. He laid special stress on the many opportunities and the wide field of experience afforded by the central position of the hospital on a populous and "fighting" neighbourhood, its proximity to the docks where accidents so frequently occurred being particularly favourable to the acquisition of surgical knowledge. In 1863, when quite a young man, he was appointed junior house surgeon with charge of medical cases and two years later, to the disapproval of the local press on account of his youth, became honorary physician, a post which he held till 1869, when he removed to London. He also made amusing reference to the little "tiffs" with the house committee and their jealousies towards the medical staff—frictions which he was delighted to hear were now a thing of the past and he had much pleasure in congratulating the medical and lay element of the hospital upon being such a happy family. He paid a special tribute to the nurses of former days, a much abused body who, though not by any means so highly trained and refined as those of the existing system, were nevertheless a devoted and sympathetic class of women, and he particularly wished to say a few kind words on their behalf. He would also like to record his thanks and gratitude to Dr. A. T. H. Waters, an old physician to the hospital and latterly the senior physician to the Liverpool Royal Infirmary, for many acts of kindness and consideration shown to him when a young man. He was delighted to have seen the progress made in the erection of the new hospital which was being constructed on the most modern lines; at the same time he could not repress a regretful feeling at the demolition of the dear old building of happy memory. The toast was responded to by Mr. J. E. Sheppard, the chairman of the hospital committee, who endorsed Dr. Roberts's statement of the kindly relations now existing between the committee and the medical staff. The toast of "The Honorary Staff, Past and Present," proposed by Dr. W. Permewan, a former house surgeon, was replied to by Dr. Glynn, Dr. E. H. Dickinson, and Mr. Chauncy Puzey, the last-named receiving an ovation. Mr. Reginald Harrison and Mr. F. Pearce replied for "The Residents, Past and Present." Colonel Macfie, C.B., proposed the toast of "The Nursing and Permanent Staffs," which was duly replied to by Mr. J. Unsworth, the secretary of the hospital. The musical portion of the programme was well rendered by the present resident staff as well as by a string band, and Dr. Roberts by special request sang the "Death of Nelson," which evoked much applause.

Death of Dr. Charles Hayes Higgins, of Birkenhead.

The death occurred on Jan. 14th, at the age of eighty-six years, of Dr. C. H. Higgins, the oldest medical practitioner in Birkenhead. He was the eldest son of the late Colonel Higgins, of the Honourable East India Company's Service. He received his medical education at Bristol, Guy's, Paris, and Edinburgh. He was elected to the honorary fellowship of the Royal College of Surgeons of England in 1844 and subsequently graduated at the University of St. Andrews as M.D. He filled several offices in connexion with the medical charities of Birkenhead and district, amongst which were the honorary surgeoncy to the Birkenhead Borough Hospital and the physiciancy to the Birkenhead Eye and Ear Hospital and Dispensary. He was formerly president of the Birkenhead Medical Society. He was an enthusiastic volunteer, holding at one time the rank of surgeon-major in the 1st Cheshire Engineer Volunteers. He contributed several interesting communications to the medical press.

Jan. 25th.

GIFT TO THE NEW INFIRMARY, PAISLEY.—Mr. James Coats, jun., of Ferguslie House, has offered to completely equip a room in the infirmary for pathological work, an offer which the Infirmary Board has accepted.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University.

AT a meeting of the University Court held on Monday, Jan. 17th, Dr. A. G. Miller (Edinburgh) was appointed additional examiner in clinical surgery for a period of two years. At the same meeting it was intimated that a donation of £1000 had been made by Sir William Priestley, M.P. for the University of St. Andrews and the University of Edinburgh, towards the cost of re-decorating the library hall. The donation was gratefully accepted.

The Cameron Prize.

This prize, which is open for competition annually to any person who in the previous five years has made any "highly important and valuable additions to practical therapeutics," has been awarded to Professor Thomas R. Fraser, F.R.S., in recognition of work done by him in connexion with the therapeutics of strophanthus.

Edinburgh Royal Infirmary.

On Monday, Jan. 17th, a meeting of the contributors to the Royal Infirmary was held to receive the managers' report for the past year. The cases treated to a termination during the year numbered 8999. The ordinary receipts for the year were practically the same as for the previous year, the expenditure, however, showing an increase of £1803. The extraordinary expenditure amounted to £4764, that sum having been expended on the new pathological department, electric light, alterations in operating theatres, &c. Under the extension fund there was an expenditure of £6898, chiefly for the new laundry. The estimated cost of the new pavilion, including the electric lighting and heating apparatus, was £39,000. Mr. Haldane, in moving the adoption of the report, stated that the managers contemplated the erection of two additional pavilions, one for ophthalmic diseases and the other mainly for diseases of the skin.

The Longmore Hospital for Incurables, Edinburgh.

On Monday, Jan. 24th, the annual meeting in connexion with the Royal Association for Incurables was held in this hospital. The report stated that the additions and alterations at present in progress would probably be completed in the summer. The additional expenditure which would be necessary after the opening of these additions would be £1250 per annum. The report pointed out the necessity for an increase in the subscriptions, especially from other parts of Scotland than Edinburgh, the patients being drawn from all parts of the country.

Edinburgh Royal Hospital for Sick Children.

Mr. Harold J. Stiles, F.R.C.S. Edin., has been appointed surgeon to this hospital in place of Mr. Joseph Bell, F.R.C.S. Edin., who has been made a consulting surgeon.

Edinburgh Infectious Diseases Hospital.

The Edinburgh corporation are building a new infectious diseases hospital arranged on the pavilion system, with about forty separate blocks, including administrative offices, nurses' home, servants' home, &c. The committee, after a careful consideration of the various schemes of ventilating and warming—mechanical and natural—applicable to the special requirements, considered that none of them were entirely suitable, and finally decided to have a competition, open to all engineers, a premium being offered for the best scheme. Competitions of this kind are not unusual for architectural work, but this is practically the first instance of such a competition for ventilating and warming. A large number of plans were submitted, under motto, from every part of the kingdom. It is announced that the successful competitors are Messrs. Dargue, Griffiths, and Co., Limited, Lord-street, Liverpool, who have already been instructed to proceed.

Students' Conference at Glasgow.

The conference of delegates from the students' representative councils of the four universities in Scotland was continued at Glasgow University on Jan. 15th. Among the numerous subjects discussed reference was made to the "consuls" at foreign universities. The Edinburgh Students' Council had arranged that each "consul" should collect all

necessary information about the classes in the university of the town where he lived, so that when a student was going abroad he could learn something about the place he intended to visit. Mr. Smart (Aberdeen) called attention to the effect which the recent regulations of the General Medical Council would have upon fifth-year students. He thought that if students were prevented from holding assistantships during their last year of medical study they would be induced to attend the university classes all the five years instead of devoting the last year to clinical work.

The Reconstruction of Glasgow Royal Infirmary.

Sketch plans showing the proposed arrangement of the new pavilions have now been prepared by the architect and have been forwarded by the subscribers' executive committee to the managers of the infirmary. They have also been submitted to the medical and surgical staffs, and there is therefore every reason to anticipate that in their final form they will meet the recognised conditions of hospital construction. It is hoped that the actual work of erection may be commenced in the course of a few months. On Jan. 19th Sir Squire Bancroft gave a series of readings from Dickens's "Christmas Carol" in aid of the reconstruction fund.

The Outbreak of Glanders in Glasgow.

The local health authorities have decided to send a deputation to the President of the Board of Agriculture to support the following recommendations adopted on the recommendation of Professor James McCall: power to licence stables, &c.; to test with mallein all studs in which glanders has by clinical evidence declared itself; to compel separation of the horses which react to mallein; to prohibit the sale of such horses and to re-test them until they cease to react to mallein.

University of Glasgow.

The court has appointed Mr. W. R. Lang, B.Sc., F.C.S., to be lecturer on organic chemistry in the university. There are to be two systematic courses, the one commencing in January and the other in April. Mr. Lang has for some years been senior assistant to Professor Ferguson.

University of Aberdeen.

The University Court of the University of Aberdeen has appointed to be additional examiner in medical jurisprudence and public health for a period of one year (in room of the late Dr. F. W. Barry) James Peter Watt, M.A. Aberd., M.B., C.M. Edin., medical officer of health for the county of Aberdeenshire; and to be additional examiner in Materia Medica for a period of three years (in room of Dr., now Professor, Stockman, University of Glasgow), Francis Warner, M.D. Lond., London Hospital Medical College.

Aberdeen University Endowment Association.

This association, which was formed at the instance of the General Council of the University of Aberdeen, has just issued an important appeal as to the most urgent wants of the University. It is proposed that the first efforts be directed towards the completion of the endowment of a professorship of history and archæology, for which an aggregate sum of £10,000 is aimed at. For this purpose the Burnett trustees are accumulating the funds under their charge, which now amount to a little over a capital sum of £5000, besides an annual revenue from land of about £40. In the second place the provision of a botanic garden and of funds for its maintenance is insisted on. A small piece of suitable ground near King's College is available. The first cost of laying out this space is put down at the figure of £200 only, and the annual expense of maintaining it with rigid economy as an open-air garden without greenhouses, estimated at £100, capitalised at thirty-three years, would amount to £3300—in all, £3500. The provision of additional funds for the administration of the University Library and for the purchase of books and the endowment of a lectureship in German is also earnestly recommended for early attention. In connexion with the library it may be added that the New Spalding Club are to permit the printing of twenty-five extra copies of the selected club publications for use by the University in establishing exchange relations with foreign academies, and that Messrs. A. King and Co., University Press, Aberdeen, have generously offered to further the scheme by supplying the extra copies of New Spalding Club books printed by them free of all charge to the University.

Jan. 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Taxation of District Lunatic Asylums.

IT will be remembered that an institution auxiliary to the Richmond Lunatic Asylum has been established at Portrane in the county of Dublin. The collector of county cess recently demanded its payment for the half year during which the demesne at Portrane has been in the possession of the Board of Control. The latter refused to pay the tax on two grounds—first, because the land and premises were Crown lands, being vested in commissioners appointed by the Lord-Lieutenant; and secondly, because they were of a public nature and exempt as such under the Valuation Acts. The amount in dispute was small, but the question of principle was considered of such importance that it formed the subject of an elaborate judgment by the Lord Chief Justice delivered in the Queen's Bench Division on the 24th inst. The Lord Chief Baron and Mr. Justice O'Brien, moreover, concurred with him in holding that those asylums were "in the nature of Government institutions administered and occupied by the servants of the Crown and therefore exempt from taxation."

The Royal Zoological Society of Ireland.

The annual meeting of the Royal Zoological Society of Ireland took place on the 25th inst. at the Royal College of Physicians. The report of the Council was read by the hon. secretary, Professor D. J. Cunningham, and showed that the popularity of the gardens as a place of resort was increasing, as proved by the rise in the gate receipts. In February, 1897, a deputation consisting of the Hon. Mr. Justice Boyd, Dr. C. B. Ball, and Dr. C. A. Stevenson, accompanied by Mr. Lecky, M.P., and Sir Richard Sankey, waited on Mr. Hanbury at the Treasury for the purpose of pressing the claims of the society to a grant, it being over ten years since the Science and Art Department had conferred on it the sum of £3000, long since expended in the erection of buildings and in improvements in the gardens. In last March the Aquarium House was formally reopened by Her Excellency the Countess Cadogan. The committee, headed by Dr. Samuel Gordon and Lord Powerscourt, having for its object the erection of a memorial building to bear the name of the former hon. secretary of the society, the late Dr. Samuel Haughton, has received much public sympathy and support. It is to be hoped that the memorial will be worthy of its subject.

Mater Misericordiæ Hospital, Dublin.

The members of the resident medical staff of the Mater Misericordiæ Hospital held their annual dinner on the 18th inst. when about fifty guests were entertained. Mr. T. B. Kerr, M.B. Dub., senior house surgeon, occupied the chair.

Hospital Sunday in Dublin.

The list of subscriptions from the churches of all the Protestant denominations to the hospitals of Dublin for the year 1897 has just appeared. The morning of Hospital Sunday in November was most unpropitious and the state of the weather doubtless affected the fund injuriously. The total (£4364), however, proves that there is still a liberal and generous public who are interested in the hospitals.

Death of Robert Abraham, M.D. R.U.I.

I regret to announce the death of Dr. Abraham, of Aughnacloy, co. Tyrone, which occurred at his brother's residence, Belfast, on Jan. 14th. Dr. Abraham studied at Belfast and Dublin and graduated M.D. of the Royal University in 1885. He was also a Licentiate of the Royal College of Physicians and Surgeons of Ireland. Dr. Abraham practised most successfully at his native place (Aughnacloy), where he was medical officer of the Ballymagran Dispensary and medical attendant of the Royal Irish Constabulary. He was most popular with his patients and his funeral on Jan. 17th was largely attended, especially by the poor, by whom he was much liked.

The Royal Victoria Hospital, Belfast.

At a special meeting of the City Corporation of Belfast on Jan. 19th the following resolution, which was passed on Dec. 22nd, 1897, was unanimously confirmed: "That a Bill to authorise the commissioners for general control and correspondence and for the superintending and directing the erection, establishment, and regulation of asylums for the

lunatic poor of Ireland, to transfer certain lands for hospital purposes to the Corporation of Belfast and to the trustees of the Royal Victoria Hospital, Belfast, be promoted in Parliament in the ensuing session, and we determine that the costs and expenses attending the promotion of such Bill shall be defrayed out of the general purposes fund or rate."

The Forster Green Consumption Hospital, Belfast.

At a meeting of the subscribers of this hospital held on Jan. 21st it was reported that there had been 57 intern and 544 extern patients during the year. The new hospital at Fortbreda was opened on Oct. 30th, 1897, for inspection and a few days later the patients were removed from the old building in Fisherwick-place, Belfast, to the present beautiful hospital. The receipts for current expenses amount to £827 15*s.* 4*d.*, against an expenditure of £825 8*s.* 7*d.* The contributions last year to the Endowment Fund were £755. At the meeting the very pleasing announcement was made that Mr. Forster Green (who was present) had given a cheque in the name of the treasurer for £5238 to wipe off the whole of the building debt. This last and most princely gift makes Mr. Green's total contributions to this hospital reach a sum of nearly £19,000. Mr. Forster Green is indeed the "father and helper of the Consumption Hospital" and he has proved himself to be the most generous contributor to hospitals in Belfast. He is a member of the Society of Friends.

The Water-supply of Belfast.

At the meeting of the Commissioners on Jan. 20th in Belfast a most important discussion took place in reference to the water-supply of that city. At present there is about 220 days' supply for the city and districts, but owing to the very rapid increase in the population and the continued erection and occupation of new buildings, in addition to the recent extension of the city boundary, it is doubtful whether there may not be difficulty in supplying the inhabitants with an adequate quantity of water. During the past twelve months domestic supplies of water have been granted to 3502 new houses, as well as building supplies to 3018 new buildings and special quantities for 331 trade purposes. As a result thirteen miles of new mains were laid and during the coming year many more will be needed to meet the requirements of the extended city boundary. Should, however, a spell of dry weather set in before the first instalment of water from the new Mourne source is available there might be great difficulty in supplying the inhabitants; hence extreme care must be taken in preventing any waste of water, and there is a strong feeling in Belfast that the Commissioners should push on rapidly with the necessary works to bring the new supply soon to Belfast. At present it is thought it will be several years before this new source is available and at the meeting on Jan. 20th some criticism was made as to why the new reservoir in the Silent Valley was not proceeded with. The chairman said it would not be constructed at present as it would cost £300,000. It is hinted in the district that the place selected is so porous in its nature that it has been found very difficult to construct a reservoir there.

Outbreak of Influenza.

At present there is a widespread epidemic of influenza in Belfast, but although a great many have been attacked the type of the disease is, as a rule, mild and there is much less after-depression than in former years.

Jan. 25th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Therapeutic Use of Salts of Silver in the Treatment of Diseases of the Eye.

AT the meeting of the Academy of Medicine held on Jan. 11th M. Darier stated that in purulent ophthalmia, and indeed, in all conditions affecting the secretory functions of the conjunctiva, nitrate of silver is recognised, so to speak, as a specific, but that its action is somewhat too caustic. He therefore proposed to use instead some salts or combinations of silver of an organic nature, for these, owing to their penetrating and highly antiseptic properties, gave just as good results as the nitrate without giving rise to the pain and the violent reactions which accompany this latter salt. Protargol, a combination of silver with protein, seems superior to every other salt of silver. It has great penetrative power and is strongly bactericidal, it is not irritating, and solutions of it will keep for a long time without undergoing any change. It is not precipitated from its solutions by either albumins or alkalies. It can be used in combination with cocaine, a method which seems to open up a new field in the therapeutics of conjunctival affections.

The Case of M. Heim.

The appeal in this case, referred to in my letter which appeared in THE LANCET of Jan. 1st, was to have been heard before the Superior Council of Public Instruction upon Jan. 15th. The press has begun a violent campaign in M. Heim's favour owing to certain personal animosities which have come to light. The appeal, however, was not heard, for the Council decided to remit the hearing until next session—i.e., six months hence—M. Heim having entered some new facts in his favour since the first hearing.

The Serum Therapeutics of Leprosy.

At the meeting of the Academy of Medicine held on Jan. 11th M. Hallopeau read a paper on the work of M. Olaya Laverde dealing with a new sero-therapeutic treatment of leprosy. M Laverde rubbed down some leprous tubercles with sterilised water and injected the fluid thus obtained. He found the patients thus treated improved both rapidly and in a considerable degree. The commission appointed to examine these results came to the conclusion that this new method of treatment was quite worth following up and that there seemed every reason to hope that it would not add one more to the many therapeutic illusions which have so often come to light in connexion with leprosy.

The Surgical Treatment of Profuse Hæmorrhage in Diffuse Ulceration of the Stomach.

At the meeting of the Academy of Medicine held on Jan. 18th M. Dieulafoy made an important communication of which the following is an abstract. One of his patients was seized with a very profuse hæmorrhage and lost in the course of thirty hours between four and five litres of blood. A gastric ulcer was suspected, but at the post mortem examination there was found not the ordinary circular ulcer but a general ulcerated condition though of a very superficial nature. Another patient, aged twenty-two years, was also suddenly seized with hæmatemesis and was promptly admitted to hospital, where M. Cazin performed laparotomy. Upon opening the stomach he found not an ordinary gastric ulcer but a superficially ulcerated patch the size of a penny. He pulled up the ulcerated mucous membrane into a fold, ligatured it, and the patient recovered perfectly. Altogether M. Dieulafoy is aware of seven cases of this kind of ulceration. It is well known that besides the simple ulcer described by Cruveilhier there may exist in the stomach a condition of very superficial loss of the substance of its walls, which is the initial phase of an ulcer and which may be followed by the gravest consequences. There is often no suspicion of anything being amiss until the occurrence of a sudden and profuse hæmorrhage. Any patient who vomits half a litre or a litre of blood at one time, especially if the hæmorrhage returns within twenty-four hours, will surely die if not operated on without a moment's delay. If the surgeon does not find an ordinary ulcer he will find a superficially ulcerated patch and should by all means attempt to ligature this bleeding region.

The Organisation for Disinfection in Paris.

M. Landrin has laid before the Municipal Council a report upon the results shown by the municipal organisation for disinfection. From this report it appears that in seven years with a staff which numbers eighty people the organisation has carried out in Paris more than 171,000 disinfections, the annual average being at present nearly 40,000. In 1886, before the service was organised, there died in Paris nearly 6000 persons carried off by epidemic diseases. Ten years afterwards, in 1896, the numbers, which had been gradually falling, fell to below 2000, that is to say, that three or four thousand human lives were saved every year. Without doubt the works which have been carried out of bringing water straight from the springs have contributed greatly to the amelioration of the sanitary condition of Paris, but disinfection has also played a large part. The total mortality, which was 54,536 in 1892, the date at which the disinfecting service was first organised, fell in 1897 to 46 987, that is to say, an average of 18·54 per 1000 inhabitants in place

of 22·47. The principal part of this very considerable diminution in the mortality of Paris is accounted for chiefly by the diminution in zymotic diseases. The mortality from these diseases, which was formerly one-tenth of the whole, fell gradually to one-eighteenth between 1891 and 1895, one-twenty-sixth in 1896, and one-twenty-seventh in 1897. Enteric fever in 1892 accounted for 691 deaths and in 1897 for 231. In 1892 there were 42 deaths from small-pox and only 12 in 1897. In 1892 there were 909 cases of measles and only 811 in 1897. The deaths from scarletfever, which were 158 in 1892, fell to 76 in 1897. There were 334 cases of whooping-cough in 1892 and only 282 in 1897. Finally, diphtheria, which gave rise to 1403 deaths in 1892, was the cause of only 306 in 1897. M. Landrin observed that tuberculosis remained stationary because prophylaxis against this terrible disease, which is accountable for a quarter of the whole mortality, is not yet a definite part of our social system. He reminded his audience that both the municipal council and the Government are ready to make a great effort to fight against tuberculosis. In addition to the measures taken in hospitals and the system of treating the poor at their own homes, as well as those unfortunates who are under the care of the Assistance Publique, measures were taken during 1897 by the municipal disinfecting organisation with the view of carrying out a more complete and methodical campaign against tuberculosis. The report concludes with the recommendation that measles, which is to-day one of the most fatal zymotics, should be made a compulsorily notifiable disease under the regulation of Nov. 30th, 1892.

Jan. 24th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Researches on Cholera Antitoxin.

PROFESSOR PFEIFFER and Dr. Marx, of the Institution for Infectious Diseases in Berlin, have published the following preliminary communication in the last number of the *Deutsche Medicinische Wochenschrift*. 1. In rabbits a single subcutaneous injection of cultures of cholera bacillus in which the organisms have been killed causes the development of powerful bactericidal substances in the blood. 2. The same is the case when cultures of enteric fever bacilli are injected. 3. Antitoxic substances were not discovered in the leucocytes. 4. After the discovery of the toxophoric cells in the spinal substance by Professor Ehrlich the organs of immunised animals were examined as to the quantity of antitoxin present. 5. Blood, serum, cerebral substance, spinal substance lymphatic glands, salivary glands, liver, lungs, kidneys, muscles, spleen, and bone marrow were examined. The antitoxic action of the blood was the most marked of all, but a considerable quantity of antitoxin was also present in the bone marrow, in the lymphatic glands, and especially in the spleen. In two instances the immunising values of the spleen were respectively twice and four times greater than that of the blood serum. 6. The antitoxins contained in the spleen are easily soluble in water. 7. The above facts prove that these organs are the places where the specific antitoxins of cholera are found. A detailed communication on the above subjects will soon appear in the German *Journal of Hygiene and Infectious Diseases*.

Skiagraphy in Diseases of the Stomach and Intestines.

In the *Deutsche Medicinische Wochenschrift* Dr. Boas and Dr. Levy-Dorn, of Berlin, have described a new method of skiagraphical observation of the gastro-intestinal canal. They point out that attempts to observe the stomach by aid of the x rays have been made ever since Roentgen's discovery was announced, but neither the filling of the stomach with solutions which obstruct the rays nor the introduction of metallic probes through the œsophagus have succeeded in giving useful results. For the skiagraphic exploration of the intestines no method at all has hitherto been invented. Dr. Boas and Dr. Levy-Dorn have now succeeded in discovering a way of ascertaining the position of the fundus of the stomach, the existence of stenosis of the pylorus and the intestines and the amount of contractility possessed by the gastric and intestinal muscles. The principle of this method is that a capsule of gelatin filled with metallic bismuth and covered with celluloid is swallowed by the patient. The bismuth being opaque to the x rays and the celluloid not soluble in the gastric and intestinal juices the position of the capsule may be seen on the fluorescent screen without photography during its way from the stomach to the anus. In the great majority of cases the capsule was seen on the great curvature of the stomach or in the cæcum near the ileo-cæcal valve. Through the other parts of the intestines it obviously passes so quickly that very frequent observations are necessary to ascertain its position. After twenty-four hours as a rule the capsule was found in the cæcum. In cases of pyloric stenosis the capsule generally remains several days in the stomach, a fact of great diagnostic value. When there is no stenosis present the capsule as a rule is passed in the fæces in from two to six days. The method may be applied in cases of intestinal stenosis also, but it is a drawback that the capsule is not soluble, so that if it is unable to pass through the stenosis an immediate operation must be performed. Dr. Boas and Dr. Levy-Dorn intend to use capsules which are insoluble in the gastro-intestinal juices but may be dissolved by chemical agents.

The Medical Courts of Honour.

The question of medical courts of honour, to which allusion has already been made in these columns,[1] has entered on a new stage. It will be remembered that the propositions of the Government were twice discussed in the medical chambers. The first Bill was amended by these bodies and was subsequently, on the desire of the Government, considered by them a second time. Nearly all the provincial chambers declared their adhesion to the opinion which they had expressed at first, and the Berlin chamber even refused to discuss the Bill over again. The Minister of Public Instruction, Dr. Bosse, to whose department medical questions in Prussia belong, has now written to the conjoint committee of the medical chambers a long letter which has nearly the form of an ultimatum. Dr. Bosse points out that it was in consequence of the wishes expressed by the representatives of the medical profession that the Government had agreed to this Bill. He says that the Government itself has no interest in this matter and will certainly drop the Bill if the chambers persist in their hostile attitude. He warns them that the laws against unqualified practice so urgently desired by their constituents will not be enacted and that other measures intended to improve the social condition of the profession will not be considered apart from legislation on ethical misdemeanours. The Minister then goes through each of the amendments of the medical chambers. One of the features of the Bill was that army medical officers and civilian medical officers in the Government service were exempted from the jurisdiction of the medical courts of honour. This section, which was one of the principal points of controversy between the Government and the medical profession, is expressly and definitively maintained by Dr. Boose. On the other hand the Minister agrees with the opinion of the chambers that a verdict of guilty ought not to be delivered unless two-thirds of the members of the court are in favour of it; in the original Bill, however, an absolute majority was sufficient. Another very important question is whether a medical man shall be held responsible for things not directly connected with his professional duties. The medical chambers have asked that the courts of honour shall only be required to censure the professional misdemeanours of a practitioner, whilst the Government desires that the behaviour of a medical man both in and out of professional life shall be subjected to their jurisdiction. As a provision of this kind may easily bring about prosecutions for political and other reasons the whole Bill will possibly be refused when the Government insists. The right of appeal which the chambers wished to be exclusively the privilege of the defendant will, according to the desire of the Government, be given to the prosecutor too. The original Bill proposed that the court of appeal should consist of the director and three members of the medical department and three members of the medical profession, but the committee of the medical chambers are desirous that it shall be composed of members of the chambers exclusively. Since the letter of the Minister has been published a very animated discussion has arisen in the lay and medical press. It is at present impossible to say what the fate of the Bill will be. If the Government chooses to disregard the wishes of the representatives of the profession and brings the Bill before Parliament

[1] THE LANCET, 1896, vol. i., p. 1178, and vol. ii., p. 1856.

it is certain to be passed. Unlike the French Parliament, where there are a good many members belonging to the medical profession, the German Parliament has only a very few medical members and the same is the case in the Prussian Diet. The medical papers naturally call attention to the disadvantage at which medical men are thereby placed and demand that in the forthcoming elections more attention shall be paid to their interests so as to avoid legislation which is not in accordance with the requirements of the profession.

Jan. 25th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Bread Riots.

"OH, God, that bread should be so dear, And flesh and blood so cheap"—the bitter cry of Hood's seamstress in the "Song of the Shirt"—is finding an echo all through Italy, particularly in the Adriatic communes where flour stores and bakers' shops have been sacked, the municipal authorities put in terror of their lives, and tranquility restored only by the military arm. The rise in the price of grain has had a corresponding effect on that of bread, at a time, too, when "miseria" is intensified by lack of work and when in all the great cities, nowhere more than in Rome, the ranks of mendicancy are reinforced by robust men and well-built youths importuning the public for charity because "da due giorni non hanno assaggiato cibo" (for two days they have not tasted food). The spectacle is a harrowing and also an ominous one and something very like panic has seized the Government and prefects alike. Measures in defiance of all fiscal necessity have had to be adopted to meet the aggressive mendicancy now patrolling the thoroughfares. Florence, for instance, has taken the initiative in lightening or temporarily removing the octroi duty on grain and in distributing bread gratuitously. Nor is the medical philanthropist idle. Professor Celli, who holds the chair of Hygiene in Rome, has been instructing the baking fraternity as to how to turn out a loaf yielding the maximum of nutriment at the minimum of cost. But all this endeavour, laudable as it is, can make small head against the "fons et origo" of Italy's misfortunes—the maintenance of a combatant force by land and sea out of all proportion to her means. Her people suffer in consequence from every kind of privation, mental nutrition being as badly provided for as physical. The schools of the lower grades are badly equipped, their teachers underpaid, and their accommodation open to every sanitary objection. Her higher education, her whole academic system, is conducted on "half-rations," no faculty more than the medical feeling the want of well-appointed clinical and experimental *locales*. Minister after Minister of Public Instruction has to meet the pathetic appeal of university after university for extended hospital and laboratory accommodation with a monotonous "non possumus" till the annual debate on the budget of Public Instruction has come to be an interchange of passionate petition on the one side and of protesting official impotence on the other. The State's impoverished resources are further aggravated by the frequent change of administration. "Solution of continuity," in the old surgical phrase, interrupts the salutary programme of this or that Minister often in sight of the goal. No one is more cognisant of this than Dr. Guido Baccelli, whose far-reaching projects of academic reform have never surmounted the stage of "first-reading." Interviewed the other day by the representatives of a Neapolitan journal the medical statesman recapitulated the schemes, scholastic and academic, with which his name is identified and passed on to the agricultural question, which, if solved aright with the coöperation of science and the practical recognition of Italy's magnificent natural resources, would tend to make the periodical bread riots from which she suffers a nightmare of the past. Had his Excellency been adequately seconded when in office we should have had "cattedre agricole ambulanti" (agricultural chairs on circuit) to bring the farmer and even the "contadino" (peasant) up to the capacity of his French or Swiss counterpart for extracting wealth from the soil. There is, however, one innovation to which Dr. Baccelli will not lend himself and that is the exclusion of English-speaking practitioners from Italy if unprovided with an Italian diploma. Significantly enough, the agitation in that sense is "hanging fire," forgotten in this other agitation which has its origin in the "pecuniary anæmia" for which the English-speaking world brings the most efficacious of remedies.

Horned Cattle and the Plague.

The Direzione di Sanità in Rome has been receiving urgent demands as to whether, in consequence of the recrudescence of the pestis bubonica in the Bombay Presidency, the importation of hides from India will be once more prohibited. Fortunately science has come to the rescue of an industry which Italy can ill afford to see suspended or paralysed and the Direzione is enabled to meet these demands with a reply in the negative. Experiments in Italian laboratories, checked by similar experiments in those of Germany and summarised for official use by Dr. Luigi Pagliani, Professor of Hygiene in the University of Turin, have put it beyond a doubt that "bovini" (horned cattle) are not liable to the pestis and that *a fortiori* their hides, particularly in the dressed state ("pelli da concia"), cannot be supposed to convey the infection.

Jan. 23rd.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates have passed in the subjects indicated:—

Surgery.—J. Buckley (Section I.), Manchester; W. J. H. Dawson, St. Thomas's Hospital; J. H. C. Fegan, Charing-cross Hospital; H. F. Forty, Middlesex Hospital; E. J. Gruchy, London Hospital; S. E. H. Martin, Royal Free Hospital; and G. C. Walker, Liverpool.

Medicine.—J. Buckley (Section I.), Manchester; J. B. Cautley (Section I.), St. Bartholomew's Hospital; W. F. Chrispin, Leeds; H. C. Cooper, St. George's Hospital; G. J. D. Davies, Leeds; G. M. F. Pereira, Calcutta and Royal Free Hospital; T. B. Sellors, Middlesex Hospital; C. H. St. M. W. Toke, St. George's Hospital; and J. H. Wilson, Middlesex Hospital.

Forensic Medicine.—J. Buckley, Manchester; J. B. Cautley, St. Bartholomew's Hospital; J. H. Chambers, Manchester; H. C. Cooper, St. George's Hospital; G. J. D. Davies, Leeds; W. J. Henson, Guy's Hospital; G. M. F. Pereira, Calcutta and Royal Free Hospital; T. B. Sellors, Middlesex Hospital; and C. H. St. M. W. Toke, St. George's Hospital.

Midwifery.—W. F. Chrispin, Leeds; R. A. Lewty, Leeds and St. Mary's Hospital; H. T. L. Roberts, St. Mary's Hospital; J. Spencer, Leeds; and J. H. Wilson, Middlesex Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise Medicine, Surgery, and Midwifery: Messrs. J. H. Chambers, W. F. Chrispin, W. J. H. Dawson, J. H. C. Fegan, J. Spencer, G. C. Walker, and J. H. Wilson, and Miss S. E. H. Martin.

HUNTERIAN SOCIETY OF LONDON.—A pathological meeting of this society was held at the London Institution on Jan. 12th, Dr. F. Charlewood Turner being in the chair.—Mr. Targett showed a specimen of unusual Rupture of the Uterus.—Dr. Keith exhibited, for Dr. F. J. Smith, the Heart of a Boy which showed incomplete closure of the ventricular septum in its upper portion associated with pulmonary stenosis.—Dr. F. J. Smith exhibited (1) a Stonemason's Lung in which there were multiple papillomata associated with great rigidity of the bronchial tubes; (2) a Suprarenal Capsule into which hæmorrhage had taken place, the patient dying from septicæmia; and (3) a Colon the surface of which was slaty black and granular with curious nodular swellings; the symptoms were those of chronic dysentery.—Dr. Dawson showed a specimen of Dilated Bronchial Tubes of a few months' standing in a case of aneurysm of the first part of the aorta.—Dr. Arthur Davies exhibited the Heart taken from a case of phthisis in which the free edge of the mitral valve was thickened from old mischief and attached to it were two large deposits of firm lymph, each of about the size of half a shelled walnut and partly blocking the orifice. There was no sign of ulceration of the endocardium. The weight was six ounces. There was ulceration of the large intestine throughout the entire length. The kidneys were large with almost white cortices.—Dr. Fortescue Fox showed a microscopic specimen of Carcinoma of the Pylorus in which the points of interest had been the difficulty of diagnosis and the formation of an abscess in connexion with the malignant disease.—Mr. A. H. Tubby exhibited a specimen of Inveterate Congenital Talipes Equino-varus which he had successfully removed by amputation six inches below the knee-joint.—Remarks on the case were made by the Vice-President, Dr. Best, and Dr. J. H. Sequeira.

THE SANITARY INSTITUTE.—The Council have accepted an invitation from the Lord Mayor and City Council of Birmingham to hold its seventeenth congress and exhibition in that city in September next.

HEALTH OF CORNWALL.—The Sanitary Committee of the Cornwall County Council report that the cases notified during December under the Infectious Diseases Act amounted to 205 against 85 in November. This is due to the typhoid fever epidemic at Camborne, the cause of which is at present being investigated by the Local Government Board inspector.

SALISBURY DISPENSARY.—The annual meeting of the Salisbury Dispensary was held on Jan. 15th under the presidency of Archdeacon Lear. The report showed that the institution was in a satisfactory position. The number of provident members was 8349, an increase of seven on the year. The payments amounted to £1254, being £731 for the Salisbury district and £523 for the outlying districts.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 19th, Dr. Cattle, President, being in the chair.—Dr. Waring read a paper on Uterine Toilette. Intra-uterine treatment in cases of septic endometritis was generally discussed, special attention being drawn to the advantages of packing the uterus with iodoform gauzes soaked in iodoform emulsion as a means not only of encouraging drainage, but also on account of its promoting a healthy restoration on cicatrisation of the endometrium. The influences of intra-uterine treatment with gauze packing upon peri-uterine inflammatory conditions was emphasised and cases of acute septic endometritis associated with parametritis and perimetritis were quoted in which treatment by curetting and subsequent application of antiseptics and gauze packing had been followed by a rapid subsidence of the inflammatory conditions.—Dr. Cattle, Dr. Wood, Dr. Hunter, Dr. Willis, Dr. Mutch, Mr. Anderson, and Dr. Tresidder spoke, and Dr. Waring replied.

LITERARY INTELLIGENCE.—Mr. Young J. Pentland, Teviot-place, Edinburgh, and 38 West Smithfield, E.C., will shortly publish the first volume of a Text-book of Physiology, edited by Professor E. A. Schäfer, of University College. It contains 996 pages royal octavo, with three coloured plates and 92 figures in the text. The price is 24s. It is divided into seventeen sections, the authors of which are Dr. W. D. Halliburton, Professor Schäfer, Dr. Arthur Gamgee, Dr. E. Waymouth Reid, Dr. E. H. Starling, Mr. B Moore, Mr. J. N. Langley, Dr. J. S. Edkins, Dr. F. Gowland Hopkins, and Dr. M. S. Pembrey. Mr. Pentland also announces the contents of the second volume, which will complete the work.—The fourth new and popular edition of "The Care of the Sick at Home and in the Hospital: a Handbook for Families and for Nurses," by the late Dr. Th. Billroth, is in the press and will shortly be ready for issue. The translation by J. Bentall Endean was specially authorised by Dr. Billroth and the new edition has been revised and enlarged. It will be published by Messrs. Sampson Low, Marston and Co.

PRESENTATIONS TO MEDICAL MEN.—On the afternoon of Wednesday, the 19th inst., Thomas Easton, M.D. Edin., Stranraer, N.B., was made the recipient of a testimonial on the occasion of his leaving the district. The presentation took the form of a silver salver bearing a suitable inscription, accompanied by a cheque representing about £100, and was made at a cake and wine banquet presided over by Provost MacRobert. The utmost regret was expressed at Dr. Easton leaving the district in which he had held the leading practice for nearly thirteen years. Dr. Easton acknowledged the kindness of his many friends and intimated that he was about to set out on a voyage round the world for his health, but stated that the presentation and good wishes expressed would be an encouragement to him in whatever sphere of life he might hereafter move.—Mr. D. B. Foley, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., of Barnsley-road, Wombwell, Barnsley, was the recipient on the 20th inst. from the members of the Wombwell centre of the St. John Ambulance Association of a marble timepiece and bronze ornaments.—At the distribution of prizes in connexion with the Dudley and Stourbridge centres of the St. John Ambulance Association, held at the Town Hall, Dudley, on Jan. 24th Mr. J. H. Wilkinson, L.R.C.P. Lond., M.R.C.S. Eng., the honorary instructor, was presented by the ambulance classes with a silver paper-knife.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.—The following candidates, having passed the Examination for Membership of the Royal College of Physicians of Ireland, were admitted as Members on Friday, the 14th inst.: James Byrne Coleman, M.D. R U I., and Francis Charles Martley, M.B. Cantab.

SUPERANNUATION ALLOWANCE. — Mr. Richard Greene, F.R.C.P., L.R.C.S. Edin., for twenty years medical superintendent of the County Asylum at Berry Wood, near Northampton, has been granted by the Northampton County Council a retiring pension of £850 a year.

VACCINATION IN THE BARTON REGIS (BRISTOL) UNION.—At the meeting of the Barton Regis Board of Guardians held on Jan. 14th the quarterly report of the vaccination officer which was read stated that there were 145 defaulters under the Vaccination Act against 205 last quarter. Of this latter number 66 had sent in the statutory declaration and 13 were fined.

THE BATHS OF BATH.—At a meeting of the Baths Committee of Bath held on Jan. 21st a resolution was passed expressing great satisfaction with the result of the mayor's conference with the members of the medical profession practising in the city and inviting them to form an advisory body to whom such medical questions connected with the management of the baths as may be deemed advisable can be referred by the Baths Committee.

BRADFORD AND DISTRICT MEDICO-ETHICAL SOCIETY.—The annual meeting of this society was held on Jan. 19th when the annual report and the treasurer's report were read and adopted. The treasurer's report showed that there was still a small balance in hand. The larger part of the society's income for the past year had been spent in actively promoting the interests of the profession, more particularly in taking such steps as led the School Board to withdraw its objectionable regulation "refusing to recognise certificates of unfitness to attend school supplied by medical practitioners." Dr. Hime was re-elected President for the third time. Mr. Miall was re-elected Vice-president also for the third time. Dr. Dunlop and Dr. Mackenzie were appointed honorary secretaries. Dr. March was re-elected treasurer. The following committee-men were appointed: Dr. Goyder, Dr. Bronner, Mr. Mossop, Mr. Horrocks, Dr. Althorp, and Dr. Manknell. The President delivered a brief address in which he referred to the progress made by the committee appointed to inquire into hospital abuse. He also mentioned with satisfaction that prompt and effective steps had been taken by the Medical Defence Association to inflict punishment on a Bradford daily paper for offensive references to a member of this society.

HOSPITAL REFORM ASSOCIATION.—The council of the association in presenting their first annual report congratulate the members on the progress which has been made in the promotion of hospital reform. Thirteen important meetings have been held since Oct. 1st, 1896, the date on which the association was instituted. The last six of these meetings were as follows:—(*a*) Meeting of the council in London on May 19th, 1897, when the honorary secretary announced that a memorial to the Royal College of Physicians of London had been referred for consideration to the council of that body. (*b*) Meeting of the profession at Manchester on May 25th. (*c*) Meeting of the profession at Bristol on June 16th. (*d*) Conference at St. Martin's Town Hall, London, on Oct. 21st, under the presidency of Lord Stamford. Sir Henry Burdett, Sir William Broadbent, Mr. C. S. Loch, Mr. Victor Horsley, Dr. Ward Cousins, Dr. W. P. Herringham, Dr. J. G. Glover, and others spoke at this conference and a resolution was passed asking the council to draw up a scheme of reform. (*e*) Meeting of the profession at Brighton on Nov. 5th. (*f*) Meeting of the Manchester Investigation Committee on Nov. 13th; the secretary afterwards attended a meeting of the profession at Liverpool and opened a discussion. After giving details relative to these meetings the council point out that at no previous time has the question been so much discussed by the medical and lay press as is now the case. It was entirely owing to the efforts of the association that an investigation committee was appointed to report on the Manchester medical charities. A proposal to appoint a similar committee at Brighton has not met with much encouragement from the managers of the hospitals in that town, but the large general hospitals in the metropolis have

appointed a committee to draw up a scheme for the better administration of medical relief in the out-patient and casualty departments.

UNIVERSITY OF CAMBRIDGE.—Mr. Osbert Salvin, F.R.S., has been elected an honorary Fellow of Trinity Hall; Mr. Biffen, Caius, has been appointed Demonstrator of Botany; Mr. Kempson, Caius, Demonstrator of Anatomy; and Mr. Pearson, Christ's, Assistant Curator of the Herbarium. Dr. W. H. R. Rivers, St. John's, University Lecturer in Physiological Psychology, has received the degree of Master of Arts, *honoris causâ*; and the same degree has been conferred on Dr. Giles, the new Professor of Chinese. The degree of B.C. was conferred on Jan. 13th upon Mr. H. R. Langmore, M.B., St. John's. None of the candidates for the M.C. degree at the recent examination were successful. Two Shuttleworth scholarships of £55 a year for Botany and Zoology will be awarded at Caius College in March next. Candidates must be medical students of at least eight terms' standing.

CORPORATE AND MEDICAL REFORM COMMITTEE.—At a meeting of the Executive Committee held at the residence of Dr. Tom R. Taylor, F.R.C.S. Eng., who presided, Mr. Victor Horsley's report to the registered practitioners of England and Wales was taken into consideration and the following resolutions were unanimously adopted:—1. That this committee, consisting of constituents of Mr. Horsley, thanks him for his able report published in the medical papers on the 22nd inst. 2. That Mr. Horsley is earnestly invited to employ his high talents, influence, and energy, not upon points over which our Direct Representatives can in the Council exercise no effectual control, but in coördinating the action and combining the energies of the profession in order to effect in Parliament various specified amendments to the Medical Acts. 3. That it will aid such action if Mr. Horsley will invite the support of his Direct Representative colleagues and of the corporate members in a requisition to the President to convene a meeting of the Council whereby the disposition of the individual members of the Council will be ascertained. With a vote of thanks to the chairman the meeting adjourned *sine die*.

DIPHTHERIA IN LONDON.—The first fortnight of the present registration year showed a continuance of the declining fatality of diphtheria in London which began in the week ended on Christmas day. In that week 56 registered deaths followed 63 in the week preceding, and in the closing week of 1897 53 deaths from the disease were recorded. In the opening week of the current year, ended on Jan. 8th, the registered deaths further fell to 50, and in the next succeeding week the total was only 44. Still, this last figure was 6 in excess of the corrected decennial average and included 10 deaths in Islington, 4 in Hackney, and 3 in Bethnal-green sanitary areas. Five of the 44 deaths were of infants and 25 in the next four years of life, only one occurring of a person aged over twenty years. In the Outer Ring there were registered 10 deaths from diphtheria, of which 4 occurred in the West Ham registration district. Last week the total of registered deaths in London fell again, the figure reached being 33, and 5 below the corrected decennial average for the particular week. Of this total 3 belonged to Fulham and 3 to Shoreditch sanitary areas. All 33 deaths were of persons aged under twenty years and 25 occurred in children under the age of five years. Last Saturday there were 1045 patients still in London hospitals on account of diphtheria. There were only 7 registered deaths in the Outer Ring of the metropolis, of which 3 occurred in Tottenham registration sub-district.

BOOKS, ETC., RECEIVED.

ADLARD AND SON, Bartholomew-close, and 30, Hanover-square, London.
Prize Essays on Leprosy. By J. A. Thompson, M.D., D.P.H., and James Cantlie, M.B., F.R.C.S. Vol. LXII. 1897.

BAILLIÈRE, J. B., ET FILS, Paris.
Lexique-formulaire des Nouveautés Médicales. Par Professeur Paul Lefert. 1898.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
Stewart Clark: One of Nature's Noblemen. By S. E. S. C. 1898. Price 7*s.* 6*d.*
The Tallerman by Superheated Dry Air. Case Notes and Medical Reports, with Numerous Illustrations. Edited by A. Shadwell, M.A., M.B. Oxon., M.R.C.P. 1898. Price 3*s.* 6*d.* net.

BAUERMEISTER, F., Glasgow.
Jahresbericht über die Fortschritte auf dem Gebiete der Chirurgie. Von Dr. Hildebrand. II. Jahrgang. Bericht über das Jahr 1896. Price 25*s.*

CASSELL AND CO., London.
The Year-Book of Treatment for 1898.

CHURCHILL, J. & A., Great Marlborough-street, London.
St. Thomas's Hospital Reports. New Series. Edited by Dr. H. Mackenzie and Mr. G. H. Makins. Vol. XXV. 1897. Price 8*s.* 6*d.*
Text-book of Nervous Diseases. By C. L. Dana, A.M., M.D. Fourth Edition. Illustrated. 1898. Price 20*s.*

FANNIN AND CO., Grafton-street, Dublin.
Transactions of the Royal Academy of Medicine in Ireland. Vol. XV. Edited by J. B. Story, M.B., F.R.C.S. 1897.

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., Charing-cross-road, London.
Ignorance. A Study of the Causes and Effects of Popular Thought, with some Educational Suggestions. By M. R. P. Dorman, M.A., M.B. Cantab. 1898.

LIPPINCOTT, J. B., COMPANY, London.
Vade Mecum of Ophthalmological Therapeutics. By Dr. E. Landolt and Dr. P. Gygax. Translated by Dr. E. Neyman. 1898. Price 3*s.* 6*d.*
Fat and Blood: An Essay on the Treatment of certain Forms of Neurasthenia and Hysteria. By S. Weir Mitchell, M.D., LL.D. Harv. Seventh edition. 1898. Price 5*s.*

LONGMANS, GREEN, AND CO., Paternoster-row, London.
Introduction to Chemical Methods of Clinical Diagnosis. By Dr. H. Tappeiner. Translated from the sixth German edition, with an Appendix on Micro-biological Methods of Diagnosis, by E. T. Mc Weeney, M.A., M.D. Irel. 1898. Price 3*s.* 6*d.*

MACMILLAN AND CO., London.
Raid and Reform. By a Pretoria Prisoner. Alfred P. Hillier, B.A., M.D., C.M. With Two Essays on the Antiquity of Man in South Africa. 1898. Price 6*s.* net.
A Text-book of Zoology. By T. T. Parker, D.Sc., F.R.S., and William A. Haswell, M.A., D.Sc., F.R.S. In two vols. Vols. I. and II. Illustrated. 1897. Price 36*s.* net.

METHUEN AND CO., Essex-street, London, W.C.
Workhouses and Pauperism, and Women's Work in the Administration of the Poor Law. By Louisa Twining. 1898. Price 2*s.* 6*d.*

SEGG, J. P. AND CO., Regent-street, London.
Oral Surgery. By E. W. Roughton, B.S., M.D. Lond., F.R.C.S. Illustrated.

SELL, H., 167, Fleet-street, London.
Sell's Dictionary of the World's Press. 1898. Price 7*s.* 6*d.*

THACKER, SPINK AND CO., Calcutta.
The Pathology of Relapsing Fever. By L. J. Pisani, F.R.C.S. Eng. 1897.

THE F. A. DAVIS CO., Philadelphia.
Elements of Latin. By G. D. Crothers, A.M., M.D., and H. H. Bice, A.M. 1898.
Outlines of Rural Hygiene. By H. B. Bashore, M.D. With an Appendix on the Normal Distribution of Chlorine, by Professor H. E. Smith. Illustrated. 1897.

UNWIN, T. FISHER, Paternoster-square, London.
How to be Happy though Married: being a Handbook to Marriage. By a Graduate in the University of Matrimony. 50th thousand. 1898.

VOSS, LEOPOLD, Hamburg and Leipzig.
Atlas der Syphilis und Syphilisähnlichen Hautkrankheiten für Studirende und Aerzte. Von Dr. M. Chotzen. Hefte 5 und 6. 1897.

WEST, NEWMAN AND CO., Hatton-garden, London.
The Centuries: A Chronological Synopsis of History on the "Space-for-time" Method. Second edition. 1897.

WILLIAMS AND NORGATE, Henrietta-street, Covent-garden, London.
On Partial Stationary Cataracts. By H. Wintersteiner, M.D., English edition of Augenaerztliche Unterrichtstafeln. Edited by Professor H. Magnus. Part XI. Coloured plates, with a text.

WILLIAMS, JOSEPH, Great Portland-street, London, W.
The Rightly-produced Voice. By E. Davidson Palmer, Mus. Bac. Oxon. 1897. Price 2*s.* 6*d.*

WYNKOOP HALLENBECK CRAWFORD CO., State Printers, Albany and New York.
State of New York. State Commission in Lunacy. Eighth Annual Report. Oct. 1st, 1895, to Sept. 30th, 1896.

A Manuscript Document constituting Real Evidence against Irresponsibility in Intoxication, and Analysis. By A. Fournet (Swan Sonnenschein and Co., London. 1898).—New Edition of Donald Currie and Co.'s Roller Map of South Africa (Donald Currie and Co., Fenchurch-street, London. 1898).—The Physiology of Love: a Study in Stirpiculture. By H. Seymour. Illustrated (L. N. Fowler and Co., Imperial Arcade, Ludgate-circus, London. Price 1*s.*)—Dod's Parliamentary Companion, 1898 (Whittaker and Co., White-street, London. Price 4*s.* 6*d.*).—Magazines, &c., for February: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Chapman's Magazine, Myra's Journal, Pall Mall Magazine, Windsor Magazine, Cornhill Magazine, Blackwood's Magazine, Pearson's Magazine, English Illustrated Magazine, Knowledge, Humanitarian.

Appointments.

Successful Applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ARMSTRONG, HUBERT, M.B., Ch.B. Vict., has been appointed House Surgeon to the Infirmary for Children, Myrtle-street, Liverpool, vice B. Curtis Kelly, resigned.

BRADFORD, JOHN, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Parochial Medical Officer and Public Vaccinator for Carluke, vice R. Stewart.

BRAY, N. J. NORTHEY, M.R.C.S., has been appointed Medical Officer to the Barry Branch of the Iron and Steel Shipbuilders' Society, vice Geo. Neale, resigned.

BRODRICK, C. C., L.R.C.P., L.R.C.S., has been re-appointed Medical Officer of Health by the Tavistock Rural District Council.

BROWNE, R., M.D. Dub., F.R.C.S. Irel., has been appointed Medical Officer of Health by the Commissioners of the Rathmines Township, vice M. A. Ward.

COOK, J. N., L.R.C.P. Lond., M.R.C.S., has been appointed Health Officer for Calcutta, vice W. J. R. Simpson.

DYBALL, BRENNAN, M.B., B.S. Lond., F.R.C.S., L.R.C.P. Lond., has been appointed Resident Casualty Officer at the General Infirmary, Leeds.

EVANS, H. T., M.R.C.S., D.P.H. Camb., has been appointed Medical Officer of Health for the Bedwellty Urban Sanitary District, vice J. T. James, resigned.

EVANS, PERCY C., M.D. Lond., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Surgeon for the Docks District of the Cardiff Provident Dispensary.

HAILEY, M. M., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the Newport Pagnell Urban District Council.

HALLIDAY, F. W., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for Wortley.

HOPE, G., L.R.C.P. Lond., M.R.C.S., D.P.H., has been appointed Medical Officer for the Seventh Sanitary District of the Brentford Union.

JONES, CHARLES STURGES, M.R.C.S. Eng., L.S.A., has been re-appointed Medical Officer of Health for Chichester.

MIDDLEMIST, GEO. E., M.B., has been appointed Second Assistant Medical Officer to the County Asylum, Dorchester, vice W. R. Hanbury, resigned.

MILNER, E. T., M.B. Oxon., M.R.C.S., has been appointed an Honorary Surgeon to the Salford Royal Hospital.

MONTGOMERIE, HUGH MAYER, M.D., C.M. Edin., has been re-elected Physician to the West Cornwall Infirmary and Dispensary, Penzance.

MORRIS, F. TEMPLE, L.R.C.P., M.R.C.S., has been appointed Surgeon for the Cathays District of the Cardiff Provident Dispensary.

NORMINGTON, A. E., M.B., Ch.B. Vict., has been appointed Medical Officer for the Workhouse, Stoke-upon-Trent Union.

RAY, J. H., M.B., Ch.M. Vict., F.R.C.S., L.R.C.P. Lond., M.R.C.S., has been appointed an Honorary Assistant Surgeon to the Salford Royal Hospital.

REED, J. S., L.R.C.P. Lond., M.R.C.S., has been re-appointed an Honorary Surgeon to the Gorleston Cottage Hospital.

ROSE, J. A., M.B., C.M. Aberd., has been appointed a Medical Officer in the Government Service at Uganda.

STANLEY, ARTHUR, M.D., B.S. Lond., D.P.H., has been appointed a Medical Officer of Health for Shanghai, China.

STRICKLAND, J. F., M.B., C.M. Edin., has been appointed Assistant House Surgeon to the Infirmary for Children, Myrtle-street, Liverpool.

SYMONS, JOHN, M.R.C.S., L.S.A., has been re-elected Surgeon to the West Cornwall Infirmary and Dispensary, Penzance.

TIPPLE, E., L.R.C.P. Edin., M.R.C.S., has been re-appointed an Honorary Surgeon to the Gorleston Cottage Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BERRY WOOD ASYLUM, Northampton.—Assistant Medical Officer for five years, unmarried. Salary £150, increasing to £200, with board, lodging, washing, and attendance.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon (to Dispense). Salary £60, with board, residence, and washing.

CHARING-CROSS HOSPITAL, London.—Resident Medical Officer. Salary £100 a year, with board and residence.

CHELSEA, BROMPTON, AND BELGRAVE DISPENSARY, 41, Sloane-square, S.W.—Honorary Visiting Surgeon to the Western District.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant.

CHILDREN'S HOSPITAL, Nottingham.—House Surgeon (non-resident) for six months. Salary at the rate of £100 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, London.—Senior Resident Medical Officer. Salary £70, with board and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Surgeon for six months. Must be unmarried. Salary £20, with board and residence in the hospital.

HULL ROYAL INFIRMARY.—Junior Assistant House Surgeon for one year. Salary £40, with board and lodging. Also Honorary Assistant Surgeon for the Out-patient Department for five years.

HUNTINGDON COUNTY HOSPITAL, Huntingdon.—House Surgeon for one year. Salary £50 per annum, with board and washing.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Junior Resident Medical Officer for one year. Salary £80 per annum, with board and lodging. Also Medical Officer for the Dispensary. Salary £180 per annum.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officer at the North-Western Fever Hospital, Haverstock-hill, N.W.—Unmarried. Salary first year, £160, £180 the second year, and £200 the third and subsequent years of service, with board, lodging, attendance and washing (subject to certain statutory deduction). Applications to the Clerk to the Board, Norfolk-street, Strand, W.C.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary at the rate of £30 per annum, with board, attendance, and washing.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (ALBANY MEMORIAL), Queen-square, Bloomsbury, London.—Anæsthetist.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary, £50 per annum, with board, lodging, and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. Board, lodging, and washing provided.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—Surgeon.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT), GREENWICH.—House Surgeon for Branch Hospital, Royal Victoria and Albert Docks, E. Salary £75 per annum, with board and residence and an additional £25 per annum if certain clinical work is performed satisfactorily.

STAMFORD, RUTLAND, AND GENERAL INFIRMARY, Stamford.—House Surgeon for two years, unmarried. Salary, £100 per annum, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary £2 per mensem, with residence, board, and washing.

SUNDERLAND EYE INFIRMARY.—House Surgeon. Salary £150 annually (non-resident).

UNIVERSITY COLLEGE, London.—Assistant Physician.

WISBECH UNION.—Medical Officer and Public Vaccinator for the First, Second (a), and Eighth Districts of the Union. Salary for the First District £50 per annum, for the second (a) district £10 per annum, and for the Eighth District £15 per annum, together with certain extra fees. Applications to the Clerk, Union Offices, Wisbech.

WORCESTER COUNTY AND CITY LUNATIC ASYLUM, Powick.—Head Medical Superintendent. Salary commencing at £800 per annum, with partly furnished house, coals, gas, washing, garden produce, &c. Applications to the Clerk to the Committee, 40, Foregate-street, Worcester.

Births, Marriages, and Deaths.

BIRTHS.

BÖDEKER.—On Nov. 24th, 1897, at Harvey-hill, Kikuyu, British East Africa, the wife of Henry Albert Bödeker, M.B., C.M., of a son.

FREER.—On Jan. 20th, at Helmwood, Woodford-green, Essex, Maude, the wife of Gerald Dudley Freer, M.R.C.S., L.R.C.P. (Colonial Surgeon Resident, Penang, Straits Settlements), of a son.

RAWLINSON.—On Jan. 23rd, at Stuart House, Bognor, the wife of F. Juland Rawlinson, F.R.C.S., of a daughter.

WICKHAM.—On Jan. 24th, at Westbourne-road, Barnsbury, N., the wife of O. A. Wickham, M.R.C.S., L.R.C.P. Lond., of a daughter.

YELF.—On Jan. 22nd, at Moreton-in-Marsh, Glos., the wife of Robert E. B. Yelf, M.B., of a son.

MARRIAGES.

HAVELOCK—LOW.—At Seaview, Monifieth, on Jan. 18th, by the Rev. Jas. Gerard Young, D.D., John G. Havelock, M.D., medical superintendent, Royal Asylum, Sunnyside, Montrose, to Edith Margaret, third daughter of James F. Low, Esq., of Seaview, Monifieth, Forfarshire, and Balmakewan, Kincardineshire.

HELBY—MARSHALL.—On Jan. 19th, at the parish church, Newent, Ernest Hasler Helby, L.R.C.P. Lond., M.R.C.S. Eng., and D.P.H., youngest son of Captain Helby, R.N., of Southhill, Paignton, Devon, to Agnes Maud Sankey, eldest daughter of W. Norris Marshall, The Red House, Newent, Glos'ter.

POWELL—WAGNER.—On Jan. 20th, at St. Mark's, Surbiton, John James Powell, M.R.C.S., L.R.C.P. Lond., of Norwood Lodge, Weybridge, to Leila Catherine Kellock, eldest daughter of Orlando Henry Wagner, formerly of Christ's Hospital.

STORRS—PHILLIPS.—On Jan. 25th, at St. Peter's, Earley, Reading, by the Rev. H. J. Storrs, late Vicar of Eastham, Cheshire, father of the bridegroom, assisted by Rev. C. E. Storrs, D.D., rector of Selsey, uncle of the bridegroom, the Rev. A. Grisewood, M.A., rector of Daylesford, cousin of the bride, and the Rev. F. T. Colson, M.A., Vicar of St. John's, Reading, Kenneth Simonds Storrs, M.B. Cantab., of Springfield, Chelmsford, to Rosa Mary, fourth daughter of Major Phillips, late of the 8th Hussars, of Inglemere, Reading.

DEATHS.

AITKEN.—On Jan. 22nd, at 28, Northenden-road, Sale, William Browne Aitken, M.B., C.M., eldest son of the late Thomas Aitken, M.D., Inverness, in his 35th year.

ARMSTRONG.—On Jan. 22nd, at Oakamoor, Barnes, S.W., Samuel Armstrong, M.R.C.S., aged 61 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.).

TUESDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.).

WEDNESDAY (2nd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.).

THURSDAY (3rd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2 30 P.M.).

FRIDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.).

SATURDAY (5th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

TUESDAY (1st).—PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Dr. Eden: Lantern Demonstration of the Age Changes in the Placenta and the Fœtal Membranes.—Dr. T. J. Bokenham: The Immunisation of Animals against Streptococcus Infection, with an account of the Properties acquired by the Serum of Animals thus rendered Immune (with lantern illustrations).

WEDNESDAY (2nd).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Annual Meeting. Specimens will be shown by Dr. Dakin and others. Dr. Cullingworth (President): The Annual Address.

THURSDAY (3rd).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, W.).—8.30 P.M. Mr. Mansell Moulin: The Treatment of Malignant Growths by Toxins.

FRIDAY (4th).—WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—8 P.M. Discussion on the Transmission and Dissemination of Cancer (opened by Mr. C. A. Ballance).

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.15 P.M. Discussion on the Serum Treatment of Disease (introduced by Dr. G. Sims Woodhead). The following members have promised to take part in the discussion—Dr. Toogood, Dr. Hartt, Dr. Dockrell, Dr. Herschell, and Dr. Izard.

LECTURES, ADDRESSES, DEMONSTRATIONS, ETC.

MONDAY (31st).—THE AFTER-CARE ASSOCIATION FOR POOR PERSONS DISCHARGED RECOVERED FROM ASYLUMS FOR THE INSANE (84, Brook-street, W.).—3 P.M. Annual Meeting.

TUESDAY (1st).—WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM (73, Welbeck-street).—4.30 P.M. Dr. H. Campbell: Cases of Localised Muscular Wasting.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3.30 P.M. Dr. Ormerod: Lecture.

CITY ORTHOPÆDIC HOSPITAL.—5.30 P.M. Mr. C. Williams; Rachitic Deformities.

ROYAL INSTITUTION.—3 P.M. Prof. E. Ray Lankester: The Simplest Living Things.

WEDNESDAY (2nd).—SOCIETY OF ARTS.—8 P.M. Mr. J. Fuerst: The Cinematograph.

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. McAdam Eccles: Emergency Operations.

THURSDAY (3rd).—CHARING-CROSS HOSPITAL.—4 P.M. Mr. Wallis: Demonstration of Selected Surgical Cases. (Post-graduate Class.)

ROYAL INSTITUTION.—3 P.M. Prof. Dewar: The Halogen Group of Elements.

EAST LONDON HOSPITAL FOR CHILDREN (Shadwell, E.).—4 P.M. Dr. H. B. Donkin: Cases in the Wards.

FRIDAY (4th).—ROYAL INSTITUTION.—9 P.M. Mr. A. A. Campbell Swinton: Some New Studies in Cathode and Roentgen Radiations.

SATURDAY (5th).—ROYAL INSTITUTION.—3 P.M. Prof. P. Geddes: Cyprus.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Jan. 27th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia. in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Jan. 21	30·41	S.W.	...	62	57	52	53	53	Overcast
,, 22	30·41	W.	...	76	57	50	50	51	Cloudy
,, 23	30·67	S.W.	...	51	49	28	38	39	Foggy
,, 24	30·52	WNW	...	51	50	39	46	48	Overcast
,, 25	30·50	N.W.	...	49	48	44	43	45	Overcast
,, 26	30·40	S.W.	...	50	49	45	43	46	Overcast
,, 27	30·42	S.W.	...	50	47	44	42	45	Overcast

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICE.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1897, which was completed with the issue of Dec. 25th, and the Title-page to the Volume, were given in THE LANCET of Jan. 1st.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1897 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

NEW FIELD FOR THE X RAYS.

WE extract the following advertisement from a contemporary. We think the advertiser proves a certain fitness for the occupation he desires by the up-to-date wording of his advertisement:—

"Smart, reliable, and highly successful advertisement canvasser (twenty-eight) shortly disengaged. Present position nearly five years, during which time he has greatly increased returns. Never yet been discharged from a firm. Proofs of ability. Good provincial paper preferred. Known to all principal advertisers and agents generally. Character will bear X rays. Wants permanency.—G. C., care of, &c."

"MR. HALL HAINS'S DEFENCE FUND."

To the Editors of THE LANCET.

SIRS,—I have now either received or been promised just over £100 for the above fund, and in accordance with Mr. Hall Hains's wishes it is proposed to close the subscription list after this week. If, therefore, any other of your readers care to subscribe I shall be pleased to receive any additional subscriptions as soon as possible. Many decline to subscribe on the ground that they consider Mr. Hall Hains should have belonged to the Medical Defence Union. The importance of every medical man taking this precaution is quite appreciated. At the same time, however, it is easy to be wise after the event and a final appeal is made to those who have neglected to insure themselves in this manner. I am, Sirs, yours faithfully,

HERBERT CARRE-SMITH,
Hon. Secretary and Treasurer to the Fund.

3, Turnham-green-terrace, Chiswick, W., Jan. 18th, 1898.

	£	s.	d.		£	s.	d.
Amount previously acknowledged	99	2	6	Mr. Edmund Owen, F.R.C.S. Eng.	1	1	0

A PROLIFIC MOTHER.

To the Editors of THE LANCET.

SIRS,—On Saturday afternoon, Jan. 22nd, I was called to see Mrs. A——. I discovered her in the fourth month of pregnancy. Mrs. A—— was married in the month of March, 1878, being then about twenty years of age. She has never had twins. She has given birth to sixteen living children at full time. She had one abortion at the third month and another at the fifth month and now she is in the fourth month of her nineteenth pregnancy, all in less than twenty years. I think her case is worth putting on record. It should be added that Mrs. A—— brought up the first twelve of her children by the breast and the milk never left her during the whole time. Before one child was weaned its successor was ready to begin. She brought up the remaining four on the bottle. She is a thin but not a worn-out looking woman.

I am, Sirs, yours faithfully,
Jan. 25th, 1898. M.B.

A SATURDAY'S MOON.

THE fair weather that has largely prevailed during the past week would have been a great blow to the gentleman who exactly fifty years ago wrote to the Astronomical Society from Bruges to the effect that in the registers kept by his grandfather, his father, and himself, during a period of about eighty years, a new moon occurring on Saturday was followed, nineteen times out of twenty, by twenty days of rain and wind. Several years later our contemporary the *Athenæum* gave publicity to Mr. Forster, his theory, and his observations, and the author of "A Budget of Paradoxes" dealt with them exhaustively, with the result that a sailor's superstition well known to many persons was placed on record, that Saturday's moon would be sure to bring bad weather. Probably even sailors have nowadays forgotten all about it, for the spread of education is destructive to folk-lore. It would be interesting to know if anyone thought of it last Saturday at all or if any maiden in any country district remembered that last Saturday was the first new moon of the year. Custom once enjoined that upon the night of the first moon after Jan. 1st a young maiden who wished to pry into futurity should sit astride upon a convenient gate or stile, and after repeating an incantation that asked the moon in somewhat halting rhymes to show her her lover, go home and dream, or try to dream, of him whom fate would allot to her as a husband. Whether if the January moon fell upon a Saturday a stormy wedlock was portended is not known; presumably the coincidence is too rare for the accumulation of statistics, and statisticians as persevering as Mr. Forster, of Bruges, and his ancestors are not often to be found even when the facts to be recorded are perfectly useless and absurd.

THE TREATMENT OF INFANTILE ATROPHY.

To the Editors of THE LANCET.

SIRS,—There is, perhaps, no department of the work of the general practitioner that gives him more anxiety than the care of sickly and weak children. These children are born and appear to thrive for a time but soon droop and fall off, and with one complication and another (for which they are liberally supplied with medicine) they become more and more emaciated and soon die. This is seen again and again, especially in crowded districts, mining centres, &c. The young practitioner generally rushes to drugs, and I take it that no one is free from this delinquency. I have had this matter brought very forcibly to my notice of late by witnessing a very remarkable cure in my own practice without the aid of drugs. We all know the picture of the child the victim of marasmus—poor, sickly, pinched, emaciated, with bowels in a constant state of disorder. Such was the condition of a child recently in my practice with the addition of prolapse of the anus. The patient was a male child, three months old, and the mother had already lost two from the same cause. She said she could not rear them, which is the usual surmise. She was somewhat anæmic in appearance and about twenty-four years of age, and had been in the infirmary for hysteria and other complaints as well. On inquiry it was found that the mother's milk was very deficient and that the child did not thrive on the bottle. After prescribing a wash of a vegetable astringent for the prolapsed rectum the mother was told to diet the child much on the following lines. [Much of it is carefully detailed in Keating's Cyclopædia of Diseases of Children, vol. i.] To make up a bottle of: cream, three tablespoonfuls; milk, two tablespoonfuls; lime-water, nine tablespoonfuls, and a pinch (nearly a teaspoonful) of sugar of milk. This last had to be ordered. To prepare a bottle of this night and morning. The child was able to take it and was soon able to consume it in quantity, so that more had to be prepared for night consumption. Medicines were avoided. As day by day went on and the child gathered strength one or more articles of diet were added to vary the feeding, whey being substituted for lime-water, bread sops being given now and then, Mellin's food allowed, and so forth. I have now to report, at the end of four months, that the child is strong and healthy like any other robust child, with fat legs and arms, and altogether a picture to look at as contrasted with the previous condition. I do not say that every child will behave the same, but it should encourage the general practitioner not to give up for lost these cases of general marasmus; and though they may treat them successfully for a time with condensed milk, mercury powders, and the usual armamentarium, as I have myself done, still I have seen no case that has impressed me so much for permanent good and definite results as the one I narrate. I am, Sirs, yours faithfully,

Jan 17th, 1898. J. W. MARTIN, F.R.C.P. Edin.

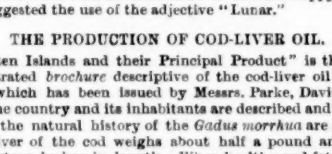
BY THE WAY.

WE recently published a short article protesting against a tramway for the Victoria Embankment. The following reference to this stupid scheme appears in the *Pall Mall Gazette* of Jan. 24th:—

"The more one looks into the proposal of the London County Council to run a double set of tramway lines along the Victoria Embankment, the more objectionable does the scheme appear. That of the London Tramways Company seven years ago was, comparatively speaking, unobjectionable, although we could not see our way to support even it. But this present scheme is an outrage. The only decent thoroughfare and riverside promenade which the whole county can boast is threatened with utter and irretrievable spoliation and for no public benefit whatever. Whereas the London Tramways Company were content to bring their lines across Westminster-bridge to a terminus by Charing-cross railway arch the L.C.C. would gaily plough up the Embankment from end to end to insert four lines of parallel iron girders bedded in cement the whole distance from Westminster-bridge to Blackfriars. The idea is so atrocious that we cannot conceive of the House of Commons entertaining it for five minutes."

THE "LUNAR" ENVELOPE.

MESSRS. REYNOLDS AND BRANSON, of Leeds, have submitted to us a novelty of practical utility which should meet with patronage. The very general adoption nowadays of sanitary towels in place of the long-used diapers is frequently a source of difficulty to ladies



who when travelling do not know what to do with them where there is no fire available to consume them. Placed in the "Lunar" envelope and left in the bed-room it is thought that servants will quickly comprehend the meaning of the printed words "Please burn this," and will deal with them as desired. It was a happy inspiration which suggested the use of the adjective "Lunar."

THE PRODUCTION OF COD-LIVER OIL.

"THE Lofoten Islands and their Principal Product" is the title of a well-illustrated *brochure* descriptive of the cod-liver oil industry in Norway which has been issued by Messrs. Parke, Davis, and Company. The country and its inhabitants are described and interesting details in the natural history of the *Gadus morrhua* are given. The average liver of the cod weighs about half a pound and measures about fourteen inches in length. When healthy and fat it is cream-coloured and soft. The pamphlet is made the more valuable by the inclusion of a coloured plate giving a comparison of healthy and diseased livers.

(1) THE CHEERFUL VENTILATING STOVE; AND (2) THE ANTI-FOULING AND NON-CONTAGIOUS CLOSET AND SEAT.

MR. JOHN LANYON, architect and civil engineer, of Northern Bank Chambers, Royal Avenue, Belfast, has recently brought two appliances of sanitary importance to our notice. The first he calls the cheerful ventilating stove and, from a coloured drawing we have inspected, it certainly would appear to merit its title. One feature about it is that it may be adapted to the extraction of the air of an apartment, thus providing a means of ventilation. It is stated that when these stoves were tested by an anemometer, there being an ordinary fire burning, the velocity in the extract flue was found to exceed 500 ft. per minute, which would represent nearly a velocity of 100 cubic feet per minute in a 6 in. flue, 200 cubic feet in a 9 in. flue, and upwards of 270 cubic feet in a 10 in. flue. The fuel employed is coke. The same inventor has designed a very

important improvement in the construction of a closet and seat. The seat is hollowed out at the back to prevent soiling by men using the closet, in the front it is curved out and hollowed so as to offer no lodgment for any objectionable discharge from either men or women. The front of the seat is so constructed as to oblige persons using the closet to sit down in the centre of the "ope." The sides are sloping and arranged on a hollowed curve to fit the body. This curve is reduced towards the front so as to offer no difficulty in leaving the seat when getting up. The basin of the closet again is so designed that the full head of flush water is kept on the whole time and there is no splashing, the excreta being effectually swept out.

AN AUTOMATIC SAFETY GUARD FOR "MOTOR" AND OTHER MECHANICALLY DRIVEN VEHICLES.

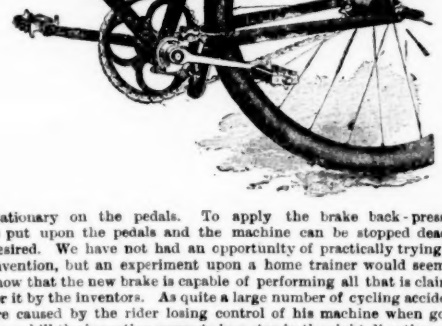
THE guards which are in general use leave much room for improvement and fatal accidents are chronicled from time to time notwithstanding their use. As a rule the guards do not reach to the ground and it is quite possible for a person to be drawn under a car and crushed to death. With the objects of avoiding such accidents the Richter Manufacturing Company, of Bradford, have placed a guard upon the market which has attached to the front platform a bush of twigs or other suitable material extending above and below the platform. By a system of wires and levers the brush is made to drop and sweep along the ground should the guard meet with an obstacle. The tendency is to brush the object on one side, but should this not be effected the body is scooped upon the platform and the upper part of the brush prevents the object from being thrown into the road. The invention is a simple one and certainly deserves attention.

ELECTRICAL TEMPERATURE INDICATOR.

MR. EDWARD DALE, A.I.E.E., engineer, of Crane-villa, Crane-street, Salisbury, is the inventor and patentee of an ingenious and delicate electro-thermometer. It may be so finely adjusted as to lead to the lighting of an incandescent lamp on breathing upon the metallic surface of the indicator. We found no difficulty in making this adjustment for temperatures near to 100° F. The indicator is constructed on well-known lines. It consists of a metal air-expansion box which is very sensitive to temperature changes. The expansion produced establishes an electric circuit, so that a lamp placed in the circuit will light as soon as contact is effected. This invention would seem well adapted for making precise observations in regard to temperature in clinical practice.

A NEW CYCLE BRAKE AND COASTER.

THE accompanying illustration shows a new brake and coaster that is fitted to the Eclipse cycles, the agents for which are Messrs. Green and Co., 9, Snow-hill, E.C. The brake acts, as all really efficient brakes should, upon the back wheel, and will be seen below the bottom bracket in the illustration. The "coaster" mechanism consists of an automatic clutch on the sprocket wheel which is thrown out of gear by holding the pedals still, the machine still moving with the feet



stationary on the pedals. To apply the brake back-pressure is put upon the pedals and the machine can be stopped dead if desired. We have not had an opportunity of practically trying the invention, but an experiment upon a home trainer would seem to show that the new brake is capable of performing all that is claimed for it by the inventors. As quite a large number of cycling accidents are caused by the rider losing control of his machine when going down hill the invention seems to be a step in the right direction.

THE STORY OF A BARBER SURGEON.

THE following delightful story appears in the *Daily Telegraph*:—An inhabitant of a little village near Mainz fell down and seriously injured his arm which became swollen and very painful. The village barber surgeon was appealed to and ordered applications of Goulard water—in German, Bleiwasser. The patient's wife, however, being very anxious, on arriving at the village shop made a mistake and asked for Wasserblei, or blacklead. On arriving at home she mixed this with water and rubbed it well over the injured arm, finally polishing the limb with flannel. This treatment had an excellent effect, the pain disappeared and the swelling went down. Next morning the barber called to see how the patient was getting on and was met by the delighted wife who congratulated him on the efficacy of his treatment. Upon seeing the arm, however, which of course was quite black, he was horrified. "What," he said, "no pain, of course he doesn't feel any pain, the arm is quite dead, gangrene has set in, and if the arm is not taken off at once he will die." A surgeon was duly sent for who of course discovered the real state of the case. What happened to the barber is unfortunately not stated, but we fear that most unqualified practitioners do not see such favourable results from their prescriptions as did their German brother.

THE BIRMINGHAM CALF LYMPH ESTABLISHMENT.

WE have received tubes of vaccine from this institution for which certain important claims are made. Thus, in accordance with the recommendation contained in Paragraph 448 of the Final Report of the Royal Commission on Vaccination the glycerinated lymph is put up in small tubes sufficient for the vaccination of one person. Since this vaccine is also under the constant control of the bacteriological laboratory of the Birmingham Medical School the product may be relied upon as active and aseptic. The agents for the tubes are Messrs. Wyleys, Limited, of 52, Moor-street, Birmingham.

"A TESTIMONIAL TO DR. WM. ARLIDGE."

To the Editors of THE LANCET.

SIRS,—Will you kindly insert in THE LANCET the following additional subscriptions to the Arlidge Testimonial Fund. The second subjoined list of donors I have been asked to forward to you, and your insertion of it will much oblige.

I am, Sirs, yours faithfully,

CHAS. F. MOORE.

10, Upper Merrion-street, Dublin, Jan. 22nd, 1898.

	£	s.	d.
Mr. Wm. J. Mickle, F.R.C.P. Lond.	1	1	0
Mr. L. R. Ashwell	1	1	0
Mrs. P. C. S. James... ...	1	1	0
The Duke of Sutherland..	5	0	0

The following sums have been received by the Manchester and Liverpool District Bank at Hanley or by Mr. W. H. Foulker, F.R.C.S., Hanley:—

	£	s.	d.
Mr. Matt. F. Blakiston, Stafford	5	5	0
Mrs. John Gailey, Leek...	1	1	0
Mr. Thos. Hughes, Wychdon Lodge	2	2	0
Mr. Robert Heath, Greenway Bank	5	0	0
Mrs. J. W. Phillips, Tean...	5	0	0
Mr. Thos. W. Twyford, Biddulph	5	0	0

Sin. Diplom.—We have every sympathy with the plight of the unqualified assistant, but we must point out that the General Medical Council gave long warning. There has been no change of policy on the part of the Council; they have only carried out intentions which were previously implied.

Z. is recommended to apply to his family medical man for the information he seeks. There is no reliable book, and if there were he would be very ill-advised to attempt to benefit by its teachings.

A. B. C.—The best books are: "The Artificial Feeding of Infants," by Dr. W. B. Cheadle, and "The Natural and Artificial Methods of Feeding Infants and Young Children," by Dr. E. Cautley.

Dr. F. H. Burton Brown.—Under the circumstances mentioned we see no harm in the acceptation of the appointment.

Etiquette.—To make such calls would be in accordance with old-established custom.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received: *Wolverhampton Chronicle, Scotsman, Blackburn Standard, Cambrian, North Wales Chronicle, Ayrshire Post, Huddersfield Chronicle, Times of India, Pioneer Mail, South Eastern Gazette, Sheffield Independent, West Briton Advertiser, Architect, Cumberland Advertiser, South Durham Mercury, Builder, Yorkshire Post, Grimsby News, North Eastern Daily Gazette, Birmingham Post, Cape Argus, Liverpool Daily Post, Manchester Guardian, Leeds Mercury, Western Morning News, Eastern Daily Press, Bradford Observer, Wolverhampton Chronicle, Hampshire Post, Retford News, Carlisle Patriot, Bristol Mercury, Royal Cornwall Gazette, Leicester Post, Newcastle Leader, Bicester Advertiser, Peterborough Advertiser, Somerset County Herald, Bridgwater Independent, Dundee Advertiser, Sussex Daily News, Cambridge Express, Lancaster Guardian, Essex County Standard, Derby Daily Telegraph, Norfolk Chronicle, Carnarvon Herald, Cheltenham Free Press, Brighton Gazette, Sun, Sanitary Record, Mining Journal, Public Health Engineer, Reading Mercury, City Press, Consett Guardian, Local Government Chronicle, Hertfordshire Mercury, Surrey Advertiser, South Wales Argus, Local Government Journal, South Wales Daily Argus, Weekly Free Press, Aberdeen Herald, Western Mail, West Middlesex Herald, Long Eaton, Heanor, and Ilkeston Journal, Faversham News, Darlaston Herald, North British Daily Mail, &c., &c.**

Communications, Letters, &c., have been received from—

A.—Mons. J. Astier, Paris; Mr. J. Ashton, Lond.; *Les Archives de Médecine des Enfants*, Paris, Editor of; Messrs. Armbrecht, Nelson, and Co., Lond.; Mr C. Allen, Walsall; Dr. F. Arnold, Bulawayo; Mr. R. B. Anderson, Lond.; Mr. M. Aitken, Sale.

B.—Dr. W. C. Bosanquet, Lond.; T. B. Browne, Ltd., Lond.; Mr. G. Buxey, Southampton; Messrs. Burroughs, Wellcome, and Co., Lond.; Messrs. P. B. Burgoyne and Co., Lond.; Mr. C. Birchall, Liverpool; Mons. O. Berthier, Paris; Bridgewater Trustees, Walkden; Messrs. Burgoyne, Burbidges, and Co., Lond.; Mr. T. W. Bateman, Lond.; Mr. W. Bates, Lond.; Messrs. Bates, Hendy, and Co., Lond.; Messrs. Brand and Co., Lond.; Mr. S. T. Bateman, Lond; Mr. W. Bernard, Londonderry; Mr. T. Bryant, Lond.; Dr. F. H. Burton-Brown, Rome; Mr. W. H. Bennett, Lond; Messrs. J. B. Baillière et Fils, Paris; Bournemouth Hydro, Secretary of; Mr. J. Barker, Maidstone.

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E.—*Edinburgh Medical Journal*, Secretary of.

F.—Messrs. Ferris and Co., Bristol; First Swiss Wine Sans Alcohol Co., Lond.; F.R.C.P., Lond.; Falona Food and Cereal Co., Lond.

G.—Mr. J. J. Griffiths, Lond.; Messrs. J. Gabor and Co., Lond.; Miss F. Girdlestone, Sunningdale; Dr. Leonard G. Guthrie, Lond.; Dr. Major Greenwood, Lond.; Mr. C. Gaine Bath; General Medical Council, Lond., Registrar of; Messrs. Gardiner and Co., Wisbech; Messrs. A. J. and A. Graham, Glasgow.

H.—Professor F. Hobday, Lond.; Mr. J. Hutton, Lond.; Messrs. Hockin, Wilson, and Co., Lond.; H. J., Lond.; Messrs. Hughes and Brown, Worcester; Messrs. Hazell, Watson, and Viney, Lond.; Dr. Hutchinson, Bridlington; Hull Royal Infirmary, Secretary of; Dr. J. Hislop, Hampsthwaite.

I.—Mr. K. I. Ireland, Bourne End; Institut International de Bibliographie Scientifique, Paris; Institute of Chemistry, Lond. Secretary of; *Indian Medical Record*, Calcutta, Editor of; Messrs. Ingram and Royle, Lond.

J.—Jenner Institute for Calf Lymph, Lond., Secretary of.

K.—King's College, Lond., Secretary of.

L.—Dr. A. P. Luff, Lond; Mr. F. W. Lowndes, Liverpool; Dr. O. Levy, Lond.

M.—Mr. E. D. Madge, Worcester Park; Messrs. J. F. Macfarlan and Co., Lond.; Mr. W. B. Moore, Stourbridge; Matto, Ltd., Lond.; Mr. R. D. Morgan, Ynys-y-bwl; Messrs. Maythorn and Son, Biggleswade; Meisenbach Co., Lond.; Maltine Manufacturing Co., Lond.; Mr. J. D. Malcolm, Lond.; Messrs. J. Menzies and Co., Edinburgh; Mr. G. McGill, Edinburgh; Madras Medical Association, Joint Secretary of; Metropolitan Water Commission, Secretary of; Dr. A. G. Miller, Edinburgh; Mr. J. H. Morgan, Lond.; Messrs. Mackey, Mackey, and Co., Lond.; Messrs. J. Marston and Co., Birmingham; Mr. C. Martin, Birmingham; Dr. J. A. S. Mackenzie, Lond.

N.—Mr. R. M. Newman, Reading; Nurses' Coöperation, Lond.; North London University College Hospital, Secretary of; Mr. N. H. Nixon, Lee.

O.—Messrs. J. Offord and Sons, Lond; *Ophthalmic Record*, Chicago, Editorial Secretary of; Oxoniensis, Lond.

P.—Mr. Y. J. Pentland, Edinburgh; Press Association, Lond.; *La Pratique Médicale*, Paris, Editor of; The Photogram Ltd., Lond., Managing Director of; *Public Health Engineer*, Lond.; Mr. C. Pollard, Worcester.

Q.—Messrs. A. Quick and Co., Clacton-on-Sea.

R.—Mr. J. R. Ralston, Plymouth; Royal College of Physicians of Ireland, Dublin, Registrars of; Royal Albert Hospital Devonport Steward of; Royal Institute of Great Britain, Lond., Secretary of; Messrs. Richardson Bros. and Co.; Liverpool; Mr. E. J. Renshaw, Rochdale; Mr W. A. Renner, Montrose; Royal British Nurses' Association, Lond., Secretary of; Messrs. A. Roger and F. Chernoviz Paris; Surgeon-Major H. D. Rowan, Valetta, Malta; Rochford Union, Southend-on-Sea, Clerk of; Rotherham Hospital and Dispensary, House Surgeon of.

S.—Mr. J. P. Sparks, Burton-on-Trent; Mr. A. W. Stone, Hull; Mr. W. P. Stocks, Salford; Mr. E. D. Stangala, Cardiff; Messrs. Street and Co., Lond.; Messrs. J. P. Segg and Co., Lond.; Messrs. Salt and Son, Birmingham; Mr. C. H. Sers, Lond.; Society of Apothecaries, Lond., Secretary of; Dr. E. S. Savage, Birmingham; Mr. J. L. Smith, Stranraer; Miss E. M. Herbert Smith, Lond.; Stockport Infirmary, Secretary of; Société Fermière des Annuaires, Paris; Mr. T. Smith, Lond.; Dr. H. Scholl-Thalkirchen, München; Syme, Lond.; Stamford General Infirmary, Secretary of; Mr. W. C. Steele Northumberland; Mr. G. C. Smith, Essex; Mr. W. Sloeman, Lond.

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V.—Mr. T. B. Vernon, Lond; Van Ness Cooper Co., New York.

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Letters, each with enclosure, are also acknowledged from—

A.—Dr. J. Adams, West Malling; A. Y. Z., Lond.; Mr. G. H. Alcock, Brentwood; A. D. L., Lond.; A., Lond.; Arbor, Lond.; A. M., Leeds; Alpha, Lond; Azygos, Lond.; Messrs. Allen and Hanburys, Lond.; Mr. J. Appleyard, Bradford.

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C.—Dr. Collier, Fulwell; Dr. G. H. Clifton, Knysna, Cape Colony; Chelsea Hospital for Women, Lond., Secretary of; Clarendon, Lond; Cardiff Infirmary, Secretary of; C. G., Lond.; Mr. G. S. Carmichael, Edinburgh; Messrs. Cassell and Co., Lond; Mr. J. Couldry, Scunthorpe.

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E.—Dr. C. A. Evelyn, York; Mr. A. Edwards, Sunny Bridge Etablissement Thermal d'Uriages, France, Director of.

F.—Miss M. A. Fergusson, Broughty Ferry; Fellows Manufacturing Co Lond.; Messrs. Fletcher, Fletcher, and Co., Lond; Messrs. Farwig and Co., Lond; Fairview, Bexley Heath; F.R.C.P., Lond., Mr. P. V. Fry, Bromyard.

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H.—Mr. J. Heywood, Manchester; Mr. G. Horder, Cardiff; Mr. W. H. Hall, Woking; Dr. A. Hollis, Freshwater Homo, Lond., H., Illingham; H., Middlesborough; Dr. J. Holmes, Whitefield; Dr. V. Harley, Lond.

I.—Dr. S. N. Ingle, Bedford.

J.—Dr. R. C. Joyce, Perth; Mr. F. F. Jones, Llanfyllin; Dr. W. C. Johnson, Broughton; Messrs. W. and A. K. Johnston, Edinburgh; Dr. Johnston, Horsmonden.

K.—Mr. H. Knevitt, Lond.; Mr. J. Keene, Lond.; Dr. C. F. Knight, Edinburgh.

L.—Mr. C. Lucas, Burwell; London Association of Nurses, Lady Superintendent of; Mr. H. B. Long, Scham; Lightburn Joint Hospital, Treasurer of; Lattice Elastic Stocking Co., Lond.; Mr. E. S. Langworthy, Lond., Messrs. S. Lee and Co., Lond., Mr. R. Lee, Cork; Mrs. Leech, Lond.

M.—Medicus, Lond.; M. O., Lond.; M.R.C.S., Lond.; M. P., Lond.; Medicus, Strand; M.R.C.S., Lond., Dr. Morgan, Ynys-y-bwl.

N.—Dr. D. G. Newton, Sheffield; Messrs. Neyroud and Co., Lond.; Noble's Isle of Man General Hospital, Douglas, Secretary of; Dr. W Newman, Stamford; Neuron, Lond.; N. B., Lond.; Nemo, Lond.

O.—Mr. R. Owen, Lond.; Oriens, Lond.; Omega, Lond.

P.—Dr. A. G. Pinear, Lond.; Messrs. Parke, Davis, and Co., Lond.; Pe sto.e Union, Clerk of; Penchant, Lond.; Messrs. J. Pook and Co., Lond., Prism, Lond.; Messrs. Powncebyand Co., Lond.; Dr. H. A. Perkins, Tunbridge Wells.

Q.—Messrs. F. and J. Quinn, Belfast.

R.—Mr. T. O'Neal Roe, Nottingham; Mr. N. A. Rabeem, Lucknow; Royal Southern Hospital, Liverpool, Treasurer of; Mr. W. Roe, Northampton; Rowton House, Lond., Secretary of; Mr. R. Roberts, Pontlottyn; Royal Halifax Infirmary, Treasurer of; R. A. O. Lond.; Radix, Lond.; Messrs. W. A. Ross and Sons, Belfast; Rusticus, Lond.

S.—Mr. F. C. Simpson, Tadley; Mr. A. St. John, Colnbrook; Dr. A. Stuart, Thornaby-on-Tees; Sturgeon, Lond.; St. John Ambulance Association, Lond., Secretary of; Mr. G. Stevens, Saltwood; Surgeon, Swansea; Surgeon, Lond.; Surgeon, Strand; Messrs. Spiers and Pond, Lond.; Stocaton Union, Clerk of.

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